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HOW TO ADD YEARS TO LIFE AND LIFE TO YEARS.*

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There is a great opportunity for medical leadership in the reorganization of society and in the management of human affairs. Physicians who are in the strategic position of studying individuals both in health and disease, are in better position to understand the constructive forces that will aid in stabilizing society because they are constantly studying the things which make for change in behavior. Civilization has become so complex that it is going to overwhelm existing society unless we are able to control those forces and compel them to flow within banks. One of the first things is to control physical disease as health is the greatest individual and national asset. The same endeavor should be applied to the protection of the mind. In our efforts to adjust ourselves to the ever changing environment of our modern life, we must make every effort in a constructive way to cherish our ideals and to evolve healthful practices.

Leaders of medical thought are appealed to in preventing the pestilences in armies and in making man power fit to fight. It must also be its great problem to make men fit to live and fight the battle of the destructive forces as opposed to the constructive ones. No grander body of men ever came together than the Medical Corps of the U. S. Army, numbering 35,000 men. We must, with this same nucleus and led by the mentors of our profession, battle to make men appreciate life and its preservation, as well as we made them fit to destroy it. After all, it is the medical corps that prevents the scourges and epidemics that decimate armies. The same intelligence and effort directed along psychological lines would prevent the moral pestilence and degradation that ensue from the loss of ideals. It seems a pity that upon the medical profession at last rested the ability to make men so free from disease that they could be the most Gaugantian destroyers of each other's lives that ever existed. We have yet a higher and nobler calling, the battle of peace has its victims no less than the horrors of war. It must not be said of the medical service that its supreme achievement was to obtain a higher degree of health protection in war in order to make the ability to destroy more enormous.

The orderly working of the mind is just as essential as healthy heart and lungs, healthy liver or kidneys. We must find peaceful and harmonious solutions of the many problems that vex the individual's peace of mind, as well as national unrest as they also are controlled by normal mental processes. Mental conflicts are dangerous, and often are the things which precede national brawls. The physician who is versed in psychology and that part of impaired psychology, psychiatry, are better than statesmen, and if their advice is sane

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and compelling it will do more good than legions of armies in the prevention of hostilities.

The most indispensable individual in any community is the all-time health officer who not only preaches the gospel of individual health, but who in a broad way administers these laws for the prevention of epidemics and for constant improvement in sanitation and cleanliness.

Tuberculosis is the captain of the men of death. It is being controlled by education and sanitation. Yet there are a million active cases in this country at all times and perhaps another million that are inactive. One of every ten persons who die, dies of tuberculosis. More than 50 per cent. of all children are affected before they are ten years of age, and it increases until they are 15 years of age. If theoretically it were possible to form a barrage of handkerchiefs for every expectorated particle that comes from the mouth and lungs of every individual and that could be immediately burned, tuberculosis and all of the acute respiratory diseases would be greatly curtailed. When one hears school boys and college boys yell, "Block that kick!" it suggests the slogan, "Block that sneeze" (with a handkerchief) ; "Block that cough" (with a handkercief). The sneeze and cough atomize a fine spray of assorted germs that are more deadly than a machine gun. As it is, the death rate of tuberculosis has been almost miraculously cut in twain in the last two decades and preventive medicine is one of its most striking victories in the throttling of the Great White Plague.

Out of about forty contagious diseases, six of them are carried by some form of insect. Many of the others are propagated by the roller-towel and any other towel that has been used, and especially from unguarded spitting and coughing and sneezing, together with drinking and eating from unsterile vessels. These other 34 contagious diseases, therefore, are contracted by getting the infection through the mouth or nose. Tuberculosis is the greatest of these. Louisiana has decreased the death rate in tuberculosis by nearly one-third in the last 6 years.

Malaria cost the lives of fifteen thousand people in the Southland alone last year, and yet if we can teach the coming generation to despise mosquitoes and destroy their breeding places and not take comfort behind screen doors, the menace of malaria can be man-handled. The draining of swamps, the destruction of little bodies of water where the mosquitoes so quickly develop and the pouring of oil on water where they are prone to breed, will go far toward lessening this terrible and unnecessary disease. A railroad company in the southwest by draining its ditches and oiling the water to prevent the breeding of mosquitoes lessened the incidence of malaria in one of the hospitals alone from over 600 a year to less than 100 . What an enormous economic gain modern medicine confers upon civilization. Louisiana has cut down the deaths from malaria nearly one-half in the last five years but she still has nearly one-tenth of the deaths of the entire registration area of the United States. She likewise has over twice the death rate per 100,000 from typhoid fever as the other states.

Nearly one-fourth of a million school children in this country are affected with organic diseases of the heart. This is a terrible indictment and especially when it is recognized that many of these cases could be prevented by the removal of infected and diseased tonsils and adenoids, decayed teeth, and by protecting children from overstrain after acute illnesses, like scarlet fever.

The year that Columbus discovered America witnessed a terrific scourge of this dread disease in Nuremburg, which spread slowly from person to person and from community to community and became not only epidemic, but almost universal. Prior to the time of the finding of the germ by Loeffler in 1883, and the discovery of the antitoxin for diphtheria by Behring in

1893, the death rate was about 35 per cent. It had broken the fireside circle of nearly every home. Now owing to the beneficence of the antitoxin and the wisdom of the medical profession in its utilization, and the education that has become necessary, the death rate the world over is now less than 9 per cent.

Ignorant of the scourge of small-pox when every seventh baby in Russia died from it, and the fact that by long periods of vaccination, we have become more largely immune to the disease and protected from its ravages, some misguided people argue against vaccination.

About one-fourth of all the deaths in this country are communicable. Pneumonia stands at the head. Tuberculosis, measles, scarlet fever, whooping cough and diphtheria are the diseases which kill children before they are 10 years of age. Diphtheria has been made very much less dangerous by the use of anti-toxin in its very beginning. It can be prevented by employing the Schick test which will tell whether or not a given child is susceptible to the disease. If he is, then it should be almost totally prevented by giving the diphtheria toxin anti-toxin. If the Schick test is negative, it means that almost infallibly the child will never have diphtheria. This has brought the death rate in New York City down to less than half of what it was five years ago, but still 547 children died of diphtheria in New York in 1923, all of which, theoretically, were preventable. Any family physician can, and should, give the Schick test to every child unless it is done at the request of the parent by the physician in charge of the school.

There is a similar test for scarlet fever with a similar name, the Dick test, which can tell whether or not a child is susceptible to scarlet fever and if so, it can be prevented with almost the same certainty as can diphtheria.

Children should be interested in the prevention of illness and in the welfare of the community health and well-being. They should know all about the water supply, which is very much more important than the dynasty of departed kings.

The annual health examination of school children is very essential, but if it cannot be done every year, it should be done on admission on the beginning of school life, and at least every second or third year thereafter, and always in the presence of one or both parents if possible, so that any abnormalities or conditions requiring correction should be thoroughly understood, and moreover should be followed up particularly by the health nurse to see that they are carried out, even if the parents do not do their full duty. The examiner could at once refer the child to their family physician or dentist, but it is the nurse's business to follow up the case with the co-operation of the teacher and physician.

Every child should be weighed and measured at least every two or three months, and every month if his condition warrants it. If a child is persistently below the standard of weight, something is really wrong, which should be corrected. Of all the simple and mathematical means to determine the health of a child, a weight chart is the best. A pair of scales and measuring rod should be in every school. If the school funds cannot or do not allow it, then the women's clubs or the men's clubs or some philanthropic citizen who would be glad to be of some real service to the city, should provide them.

City Boards of Health should offer to the schools (public, private and parochial), nursing service, especially for the diagnosis of communicable diseases, medical and dental service, nutrition classes, little mothers' classes, health talks, supervision of children in open air schools, and open window rooms, and special medical attention to the handicapped, including the deaf and the partially deaf, blind and the partially blind, and the crippled.

We should have the fullest co-operation with the State Boards of Health. We should have "state medicine" in its better and broader sense, not in the contract physicians' sense, or its degeneration to the plane that it was in Germany or the panel system existing in England, but modern American medicine with a larger outlook, wherein the state, in connection with the physician, conserves the health of the individual and supplies laboratories for the aid of the rural practitioner and encourages county and community hospitals.

PERIODIC HEALTH EXAMINATION

Periodic health examination is the acme of preventive medicine for the patient and the apotheosis of pre-clinical medicine for the profession, and requires a big program. The Medical Society should sell it to its own members and then to the laity by proper informative lectures to special groups, churches, clubs, schools, public meetings and fraternal organizations. Leaflets for distribution among the profession should be prepared by a special committee, another for popular distribution among the people at large for their information. Posters should be obtained for quick visual education, a *health week* established locally, the press should be called on for its help in the essentially individual and public health movement.

In the apparently normal person, who has a systematic physical examination, even if no real abnormality is found, he often needs, and will ask about other health problems, those of adolescence, sex education, exercise, diet, environment, mental hygiene and the principles of sanitation.

If all the duty of life comes from duty well done, there is no more gratifying experience than the appreciation the patient expresses after a thorough, painstaking examination. They want it, they deserve it, they appreciate it. The satisfaction of the average person after having passed a successful physical examination and test, is really appealing. The opportunity for correction of minor defects and incipient disorders is alluring. The "ounce of preventive" must have been coined in anticipation of universal physical examination of the apparently well. So many conditions can be presented, many more alleviated, and cure can be invoked in the cases still amenable to relief.

It will take such a large block of diseases from the advanced and the irremediable class into the incipient and curable class. It will lay the ghost of the age-old plaint of the physician, "If I had only seen you a little earlier."

One out of six applicants for life insurance are declined or postponed. The annual health audit will detect albumin or sugar, high blood pressure, slight cardiac disorder, incipient tuberculosis, beginning neoplasm, and any and everything else. Your family physician will do the rest. What does it profit a person to be an ostrich with his ailments or like the Spartan youth to hide a disease until it gnaws out his vitals? Get the disease before the disease gets you. Get it early. Get it before you think you have it.

People have too long had such faith and confidence in their physician that they think he can cure anybody who has not been dead over three days. Our profession admires the faith of their clientele, but dislikes to be put in such superlative and unequal tests.

If elevators are inspected regularly, why not one's mouth and teeth? If a boiler must be examined regularly, why not your heart and lungs? You have tested the brakes on your car, why not the kidney function? You have your watch regulated, but not your diet. You have your batteries charged, but you let your weight run down from disease.

Should the most complex and wonderful mechanism in the world, that not made with hands, be allowed to become broken or impaired, to corrode or disintegrate? Neglect

your business if you must, neglect your golf if you can, neglect your wife if you dare, but don't neglect your physician and a yearly physical examination and health inventory on your birthday.

THE LOUISIANA STATE MEDICAL SOCIETY AND MEDICAL PROGRESS—1895-1926.*

THE DEBT OF LOUISIANA AND OF THE SOUTH TO MODERN SCIENTIFIC MEDICINE FOR THE PRESENT ERA OF UNPARALLELED SALUBRITY AND PROSPERITY. A RETROSPECT AND PROSPECT.

BY
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NEW ORLEANS.

Mr. President, Fellow-Members of the Louisiana State Medical Society.

LADIES AND GENTLEMEN:

It is with a sense of grateful appreciation that I appear before you tonight. This occasion transports me to a period of my life which was made memorable by the signal honor conferred upon me by the Louisiana State Medical Society when it lifted me to the Presidential Chair and thereby rivetted for all time the ties that have bound my professional interests and affections with the altruistic purposes and high aims of our State organization. This happened in 1895, and thirty-one years have rolled by since that, to me, momentous event, and I am happy to be here to enjoy with you the fruition of the bountiful years that have followed. The memories of that year, in which I served the Society as its executive, are as vivid now as they were then, and the graciousness of your favor and the aid received from my associates and fellows in the accomplishment of my task, remain indelible and linger as a precious perfume, fresh and fragrant—to animate me on this occasion.

*Address delivered at the Annual Meeting (public session) of the Louisiana State Medical Society, held in Monroe, La., April 15, 1926.

And what an enormous distance we have travelled in the three decades that have intervened between 1895 and 1926! Only those who have participated in the medical life of this period—the most prolific in scientific discovery and momentous in the history of American medicine and in the world's progress—can realize the immensity of these thirty years when measured in units of discovery and achievement.

Medicine, profiting by the world energies that have been set in motion by the revelations of the physical, chemical, and biological sciences in the 20th century, has traveled with a vertiginous pace that, when contrasted with the past, can only be conceived by comparing the speed of the old doctors' horse and buggy with that of the automobile and the aeroplane. In this flight over the years, we who have lived in this Southern section of the country, have witnessed a succession of changes in medical thought and practice which to the practitioner of thirty years ago have seemed no less than a mirage such as that which startles the fevered brain of the lost wanderer in a tractless desert where he sees sparkling streams and umbrageous trees under which to rest and quaff his parched throat.

These bewildering visions are not a mirage, but a reality which reflects the radical transformations in medical thought and practice that have followed in the wake of the Scientific discoveries and new acquisitions of medical science in the last three decades. These have so completely altered the status of medical education, medical organization and medical licensure, that the M. D. of 1895 would feel as much out of touch with the world about him as another Rip Van Winkle on awakening in 1926 after a sleep of thirty years.

Just see what these thirty years have done for this organization, the Louisiana State Medical Society, a mere glance at the annual volume of transactions will show,—how its constitution and administration have changed to meet the requirements of

an ever expanding, progressive and represenative professional democracy. The present meeting attests not only to the great expansion of the organization, but also to the greater interest and sympathy in which the general public views the problems which are now engaging our attention.

Look at the mere titles of the subjects that have been brought up for discussion at our yearly meetings and you will realize the upward strides that have marked the march of the organization to its present high level. The Fellows who dropped off the roll in 1895, would have to consult a new lexicon in order to understand the language and interpret the meaning of the new words and phrases that have been coined since 1895, and that have come into circulation as a new currency issued by the treasury of medical science to meet the requirements of the present concepts of disease and the technic of modern scientific practice. And what a difference in the meaning that we now attach to some of the older terms that we were beginning to babble in the infancy of the many new offshoots of the tree of knowledge which were mere saplings in 1895, and have since become the "green robed monarchs of a mighty forest." What did we know then of X-ray and Roentgenology, of radium and radiology and Curietherapy? What did we know of bronchoscopy, esophagoscopy and what these two inventions have done to simplify the extraction of foreign bodies in the food and air passage; of cystoscopy and pyelography and what these have done for the progress of genitourinary surgery; of broncho-pulmonary radiography with lipiodol and other opaque substances for the diagnosis of pulmonary lesions; or ventriculography as the latest aid in the diagnosis of tumors and other surgical affections of the brain? What did we know of biochemistry, hematology, serology, hemotherapy, antitoxins and prophylactic vaccines? We had not heard of anaphylaxis, allergy, and all the extraordinary developments of modern immunology which have sprung out of the immensity of the new sciences of bacteriology, protozoology, mycology and parasitology in their modern application to preventive medicine and to the every day problems that face the practitioner at the bedside. What did we know of endocrinology, of vitamines and the deficiency diseases? What did we know of physiotherapy and its dependencies, heliotherapy, diathermy and electro-therapy in the many and highly differentiated methods of healing by light, heat and water, as Nature's own most restorative and bountiful therapeutic agencies?

The immense strides of surgery which had been foreshadowed in the eighties with the dawn of the Pasteurian and Listerian renaissance, were only beginning to shape the course of the new Surgery in the nineties. In 1895, we were barely emerging from the atmosphere of carbolic acid sprays and bichloride baths of the early antiseptic period to enter into the aseptic era in which heat, steam and boiled gloves gave us the certainty of sterilization and the confidence of victory in our battles with wound germs and infections. We did not tarry long in our conquests of the extremities to enter boldly into the more sacred and forbidding precincts of the great visceral cavities; thus the abdomen, the chest and the cranium yielded, while in life, the secrets of the master organs which had, until then, remained hidden and undisclosed except by death. In this way no territory or region of the human body has remained unexplored and, in consequence, a vast catalogue of entirely new operations and technical procedures has accumulated which have been classified and labeled in a way that would be as unintelligible to the surgeon of 1895 as the modern concepts of the atom, of the ion and of the proton, would be to a physicist of that day. While asepsis was working magic in the prevention of infection, the other two legs of the surgical tripod were not lagging behind. Local anesthesia, which had been made possible by Koller's discovery of the anesthetic prop-

erties of cocain in 1885, only became regional, splanchnic and spinal long after 1895, when, through the combined efforts of the synthetic chemist and surgeon, new and safer substitutes for cocain, including that most powerful adjuvant, adrenalin, were added to the technic. These improvements have culminated in the perfected methods of analgesia that are applied with so much safety and success in our day. The methods of general anesthesia have likewise been transformed by the constant labors of the chemist, the physicist, the physiologist and the clinician, so that the sleep of general anesthesia has been made safer, less tempestuous and infinitely quicker than it was in the days when chloroform was our only anesthetic agent. The passing of chloroform as the preferred anesthetic of the surgeons of the South and the substitution of ether in general practice was one of the interesting phenomena that occurred in the nineties. In the displacement of both of these agents by nitrous oxide and oxygen, ethelyne and other gases, and by other synergistic combinations, administered by specially trained professional anesthetists, we find one of the most notable contrasts between the old surgery and the new.

The third leg of the surgical tripod—hemostasis, has kept the pace of progress as nimbly as the other two. Not only has the prevention of shock and the control of bleeding in the course of operations become one of the distinctive features of modern surgery, but the methods of replacing the lost volume of blood after hemorrhage distinguishes, in an entirely novel way, the practice of the present day and that of thirty years ago. During this time we have seen the revival and generalization of blood transfusion, either whole or modified by citration, as a current practice. Not only for the replacement of blood loss, but for the prevention and cure of a number of hemorrhagic dyscrasias and hemolytic diseases. In addition to transfusion, as a life saving measure, intravenous infusion of saline, glucose, insulin and other remedial nutritive solutions, which serve as artificial sera, have come to play an enormous part in the conservation of life in the great emergencies of surgical and medical practice. But what is more recent and important, is the utilization of the growing resources of the biochemical and other laboratories for determining the fitness of patients for operations, and for anticipating the complications and dangers that may follow them.

The world war of 1914-18 brought out of its horrors many revelations, discoveries and inventions which have redounded to the benefit of humanity in peace as in war. It taught us new and more effective methods of sterilizing infected wounds. It gave us a new arm in chlorine and its compounds—hypochlorous acid as eusol and sodium hypochlorite, in the Dakin solution, which, when applied by the method of Carrel proved of extraordinary efficiency in disinfecting wounds. It introduced a number of new and powerful antiseptic dyes. It gave us the method of "debridement," or otherwise, the excision of contaminated tissues—as the most certain method of *preventing* the fatal infections of war wounds. It taught us new methods of repairing shattered bones, joints, and mangled limbs. It taught us how to extract projectiles and foreign bodies lodged in the vital organs, in hitherto inaccessible places—the lungs, the brain and the heart itself. It practically recreated plastic surgery and advanced the rehabilitation of the crippled soldiers to a marvelous degree. It demonstrated the protective efficacy of vaccination for typhoid, tetanus and other pestilential epidemic diseases, that until recently were the terror of armies. It promulgated the prophylaxis of the venereal diseases in a tone of conviction and authority never heard before. It taught us the secret of curing thousands of victims of the deadly influenzal empyemas, who would have perished by the older methods of treatment. And, in so many hundred

ways, this deadly war, paradoxical as it may seem, brought out of its ferocity, ghastliness and deadliness, innumerable new principles, methods and suggestions that have saved and are saving many lives that would have been doomed without the knowledge derived from this war experience.

The great war also brought out in a flaming light the incalculable service rendered by the professional trained nurse as the necessary collaborator of the doctor in the proper care of the sick and injured.

The hygienic and medical care of two million recruits who had been assembled in the different camps and cantonments in the country, in preparation for the battles across the seas, brought the mass of the people in closer touch with the problems of medical practice and gave a higher valuation to hospital service than has ever been known before.

The establishment of numerous government hospitals for the care of disabled veterans has also helped to promote a public interest in all institutions for the care of the sick, and out of the movement initiated by the American College of Surgeons in 1915, and with the support of the American Medical and other national associations concerned in the development and betterment of hospitals, a new concept of the functions of these institutions has arisen and developed into a nationwide propaganda for highest standards of service which has no parallel in the history of this or any other country. During the eight years that followed the war, we have seen a complete revulsion in the public feeling towards hospitals and institutions for the care of the sick and injured. Where formerly, the hospitals were regarded solely as a sort of "court of last resort" to be appealed to only when compelled by dire necessity, we now find the public willing and ready to avail itself of the advantages of these institutions for the study and investigation, as well as the treatment of disease. The public has come to recognize that the hospital is the proper place for the sick and injured, just as the school is the proper place for education, and the theatre for amusement. The home can no longer meet the requirements of modern surgery and medicine, nor can the home give the guarantees of safety that are found in the lying-in wards of a well conducted hospital. The multiplication of the specialties, and chiefly the supremacy of surgery as a means of cure, and the increasing demands for laboratory research, have transformed the modern hospital into an educational as well as a curative center for the investigation or diagnosis of disease, as well as for its treatment. The hospital has now become a unit of social service in every intelligent community, and the progressiveness and intelligence of the community can be measured by the efficiency and character of the hospitals that serve its needs. What better proof of the growing public appreciation of the extraordinary advantages offered by a modern well equipped hospital as the proper place for the suffering and afflicted, than the mere fact that in 1925 over twelve millions of people went through the hospitals of the United States and Canada at an approximate outlay for maintenance of over one billion dollars! Could we have prophesied over thirty years ago that such a revulsion in public feeling could have occurred in our own days? What better tribute to the progress of medicine in its social, economic and technical development!

With the multiplication and growth of the specialties in every department of medicine, we have been called to witness the decline of the time honored general practitioner. He is gradually disappearing and merging with group combinations of clinicians, surgeons, internists, specialists and laboratory workers of all kinds, who work together in clinics, hospitals and private sanitariums in order to adapt themselves

to the demands and multiplying exactions of modern medical methods and practice.

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All this and more we have seen that fills us with wonder at the progress of the age. More achievements than it would take volumes to relate, but that are too well known to you to call for a rehearsal on this occasion. I must ask your indulgence, however, to consider one exception which is pertinent to this occasion and, I believe, worthy of your attention. For, above all the wonders that I have related, the greatest that we have witnessed in the thirty years travel since we met in 1895, have been the exploits and achievements of sanitary science guided by the light of experimental medicine. I refer to the discovery of the causes and mode of propagation and control of the great pestilential and endemic diseases, yellow fever, malaria, typhoid, typhus, cholera, bubonic pest, pellagra, hookworm and other plagues which for centuries have been the scourge of humanity and the deadliest enemies of human progress.

Medicine has made it safe not only to colonize and redeem vast areas of the earth's surface, which had been uninhabitable to civilized man, but it has made it possible for capital, commerce and industry to exploit the prodigious resources of the land in more temperate and well settled regions, such as ours, that have been lying idle for centuries through the fear of disease.

We, Louisianians and people of the South, have special reasons to be grateful for the advances of medical science and particularly of experimental medicine in its sanitary applications.

Look at what experimental medicine, guiding the hand of sanitation, has done for our own New Orleans and for the health, and in consequence, the prosperity of Louisiana—and for that matter, of the whole South. Take one instance, yellow fever as an example.

When we were meeting in New Orleans in 1895, the people of that city and of the whole seaboard of the South were living in perpetual dread of the periodical visitation of that fell destroyer—Yellow Jack.

You, who live in Monroe have been practically exempt from this plague, at least, as far as I can learn from history. But you have known its anxieties and you have suffered in the past as all the people of this State and of the neighboring gulf states and all those inhabiting the Mississippi Valley, by the restrictions and trammels put upon their commerce by the rigid quarantines, often of the shotgun variety, that forbade all communication by land or water with the metropolis and other suspected places. We, and all the people of Mississippi, Alabama, Arkansas, Texas, and Florida, felt and suffered the paralyzing effect of this exclusion of our port—"the gateway of the Mississippi," and of the seaboard, from commercial, economic and social relations with the outside world. In New Orleans, we lived in a state of constant dread and suspense, which was only relieved by winter's frost or when the surviving population remaining after a great epidemic had been immunized by previous infections. We lived in this state of uncertainty until 1905 when a large contingent of foreign non-immune immigrants, chiefly Italians, furnished the needed fuel for another epidemic conflagration, which would have been as widespread and deadly as that of the frightful visitation of 1878, had it not been that the new arms and methods, discovered in Havana, by the United States Army Yellow Fever Commission, and by the immortal Gorgas, during the American occupation of Havana after the close of the Spanish War, brought us the long prayed for means of salvation. The discovery that the familiar, domestic, or "cistern" mosquito, the *stegomyia fasciata* or *calopus* was the only agent that transmitted the disease is a matter of history which has been told so often that the story is now threadbare by repetition.

Nonetheless, this glorious chapter in the history of the conquest of yellow fever is a heroic epic in which the names of Walter Reed, Jesse Lazear, James Carroll, Aristides Agramonte, Charles Finlay and Wm. Crawford Gorgas, will figure in flaming characters on the imperishable roll of humanity's greatest benefactors.

The first victory of sanitary Science over yellow fever was won in Havana in 1901; the second and greatest in New Orleans, in 1905. In both countries the victory was won by declaring war on the mosquito. In the first battle field, Havana, a beautiful island, Cuba, "The pearl of the Antilles," was delivered from the bondage of centuries; in the second, New Orleans, the fate of a great metropolis was decided and with it, the future of the southern half of a continent was definitely assured. A little reflection will show that this is no exaggeration when we consider what the perpetual menace of the annual visitations of yellow fever meant in the past to the life of New Orleans; attaching to it a mal-odorous reputation of insalubrity; to the forbidding effect it had upon the growth of its population, upon its civic development and the dwarfing influence it had upon its commerce, as well as upon the progress and development of Louisiana, and, for that matter, upon the entire South. It restricted and actually forbade the most desirable and intelligent immigration. It kept Capital, Industry, Manufacture, Commerce and Finance at a distance; it put an embargo upon our maritime trade and expansion and reduced our river traffic to practical insignificance, beside diverting the great railroad trunk-lines into other tracks.

The victory of 1905 had the immediate effect of inspiring confidence in the future of New Orleans and in the whole Southern seaboard. An immeasurable evil had been suppressed and the means of preventing it in the future had been discovered. It put a new spirit and a new faith in a once apathetic, plague stricken and discouraged community. By revealing the dangers that lurked in the familiar but hitherto dreaded pest,—the mosquito, it brought the people face to face with the startling realization of its perils. It forced upon the community the consciousness of the utter inefficiency of the primitive and obsolete systems of sanitation or *insanitation* — of sewage, drainage and water supply—which prevailed, and which had long ceased to be fit even for an antiquated colonial regime. It made necessary the destruction of the hundred thousand wooden cisterns, the paving of miles of mud streets and open gutters and stagnant basins and other perpetual culture media for the breeding of insects and the spread of disease. It was therefore the battle and great sanitary victory of 1905 that put a spur to the civic regeneration which we contemplate with so much pride in the New Orleans of today.

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And now that this has been done and the security of the South from the perils of foreign pestilence, yellow fever, bubonic pest and the prevalent endemic plagues, malaria, typhoid, hook-worm and pellagra, have been controlled, we are called to witness a transformation in the vital, economic and living conditions in the South that could scarcely have been credible, even as a miracle, not more than ten years ago.

Look at what is going on over our State, Florida, Mississippi and along the Gulfcoast, now better known as the Riviera of the South. Look at the hundreds and thousands who are flocking from the North, East and Middle West, and along the States bordering on the Mississippi River, who are pouring their millions into this great Southland, once looked upon as the abode of disease and pestilence and now appraised as a fabled El Dorado, a land of promise and of plenty, of health and of wealth, such as no prophetic seer in the past could ever dream of. Look at your own city, Monroe, with its extraordinary expansion, its rapidly increasing and

thriving population, its new industries, its manufacturing plants, its modern hotels, its numerous railway facilities, its river traffic, fine highways and, not least, its modern and thoroughly equipped hospitals, and, on top of it all, the recent discovery of one of the richest oil fields in the State.

Does this not speak for the new era of progress and prosperity which has come all over the South since the keen scented and clear-eyed watch dogs of finance have come to the realization that Louisiana and the South held treasures in natural resources that had lain hidden and idle since primeval ages, and that no one had touched for fear of that hundred headed Hydra of disease which stood guard over the soil and destroyed with its deadly poison those who trespassed upon her domain! But since the news has spread that the Hydra of yellow fever, malaria, typhoid, hook-worm and pellagra has lost its fangs, a new spirit of enterprise has risen and everywhere men with ambition, brains and brawn are rising to the opportunity in every community, and are reaping rich reward for their vision and courage.

So, to come back to where we started what is all this great wave of prosperity, this boom,—so called, which in the course of a decade has spread all over Louisiana, the Gulfcoast and the South, due to? Can any one who reflects and knows the history of the country, deny that the mainspring to this extraordinary movement was touched by the hand of sanitation guided by the light of modern experimental and preventive medicine?

The younger generation and the new populations that have settled here and throughout the Gulf States in the last quarter century and later, engrossed as they are in their newly acquired activities, and satisfied with the exploitation of their ever expanding opportunities, have come to look upon these as the spontaneous or natural outcome of improved and modernized civic, commercial and sanitary conditions. They have little time to look at the past and scarcely know that there was a transformation—a sanitary revolution—and much less do they know the causes that have made their own success possible. It is we, the older inhabitants, who have lived through the transition period between the old, disheartening and depressing conditions, and the present busy bustling exaltation—the spirit of "big business," that now pervades the atmosphere—who revive the memories of the great event in our sanitary history which transpired in the South in 1905, with New Orleans as the initial center which inaugurated this wondrous transformation. It is only now that we recognize its transcendent importance as the greatest factor in bringing about the extraordinary wave of prosperity that we are witnessing and enjoying today.

The lesson taught by the anti-mosquito campaign of 1905, has spread like an evangel of salvation throughout the world. The vast populations of the sea bordering states and the people of the Mississippi Valley, hitherto imperiled by the same cause, have shared with us the benefits of the same sanitary strategy which has insured our immunity and safety. With that perennial focus of the disease in Cuba and the West Indies, with the great ports of Central and South America regenerated in the same way, the dangers of importation from these sources of infection, have been definitely eliminated.

When we consider what the delivery of New Orleans from the thraldom of Yellow Fever has meant to that city, and to the whole South, is it not also proper that the school children should be taught in their text books, the names of the great men who contributed to such a stupendous achievement? Should they not learn that the peaceful and bloodless victories of science that mark the triumph of man in the eternal conflict with his invisible but deadly foes,—the predatory parasites of the micro-

scopic world,—are fraught with infinitely more significance to the welfare of the race than all the bloody battles that bear testimony to "man's inhumanity to man?"

But while we rejoice in the fall of the stegomyia and with them the extinction of yellow fever, let us not forget that the minions of that arch enemy, the mosquito, in its several guises and breeds, still lives in our midst and that our sanitary redemption will never be complete until these pests are driven from the land. We still have the anopheles that propagate malaria and are banded with swarms of several other breeds of mosquitoes, that transmit other diseases and that render life almost unbearable with their stings, in so many of our most beautiful and God favored summer resorts, on the Gulfcoast and in the rural districts. The improved sanitary conditions, the drainage and sewerage in the cities, the pure and abundant water supply and the paving and building that is going on in all our modern communities, have driven the malaria breeding mosquitoes out of the metropolis and other progressive towns and cities. The progress which has followed in the wake of the great discovery of the chief cause of our insalubrity in 1905,—yellow fever, has roused a wide interest in the extermination of the mosquitoes from the marsh lands and from the rural districts, and every effort should be made and aid given by the State and by the people of all the adjoining and suffering states, to effect this much prayed for consummation. We all realize that this is a stupendous task, but with the aid of the Federal government, the Public Health Service, and the Rockefeller and other great philanthropic foundations, which have already done so much to better the health conditions of the people of the South, the ultimate or final delivery of the richest and most fertile section of our Southern country should be successfully accomplished. An eminent sanitarian, residing in the North but a loyal friend of the South, Dr. Frederick L. Hoffman, said recently: "Nowhere on the globe has Nature done more for man than in the South, and if man will do his share in redeeming the large areas now suffering from the handicap of ill-health producing conditions, if man will but provide the necessary drainage and the required sanitation for the destruction or elimination of the anopheles and other breeds of the malaria breeding mosquitoes, and similar parasitic pests, the 'new south' of the future, will outdistance the 'new south' of the present, as much as it now eclipses the 'old south' of a quarter century ago."

* * *

Mr. President: When I was invited to address the Society on this occasion, I was not aware that my name would be coupled on the program with my official capacity as President of the American College of Surgeons. Had I thought so, I would not have wandered so far into the past of our Association, but dealt strictly with the living history, the purposes and the achievements of the great organization that I have the honor to represent.

But I feel that in reviving the historic and epochal events of 1905 in their bearings upon the present prosperity of Louisiana and of the South, I have only brought back to life one of the most glorious episodes in the history of the medical profession of Louisiana, a page that appears to have faded or at least, to have been lost in oblivion by the present generation, in spite of the indelible characters in which it has been inscribed in the memory of those who participated in its achievement. And I do not feel apologetic for my shortcomings, for is not the American College of Surgeons represented in your city by a group of men who would honor the Surgical profession in any community, and who would meet the most exacting requirements demanded for the practice of their art by any competent tribunal?

Again, I am comforted by the presence on this occasion of two of the most eminent

representatives of the American College of Surgeons. One an ex-President and a guiding spirit in its councils, one of the greatest living masters of Surgery in America, nay, of the world; one who with his brother personifies the most beneficent influence for the progress of Surgery that has come to the medical profession of America, and, in addition one of the best loved of men—Dr. Wm. J. Mayo.

The other, a distinguished member of the Board of Regents of the American College of Surgeons, now president of the greatest medical organization in the world,—the American Medical Association, and one of the most brilliant representatives of the South in the Medical Councils of the Nation,—Dr. W. D. Haggard, of Tennesse.

With these eminent representatives of the College before you, need I utter another word to prove the wisdom of the College or descant on the progressive and altruistic purpose that animates the American College of Surgeons, or refer to its extraordinary record of achievement in advancing the standards of Surgery and in protecting the most vital interests of the public?

Mr. President: Since I have begun this evening's remarks in a reminiscent mood, will you permit me to close what I have to say tonight with a brief reference to an incident in the history of this Society which is intended to revive the services rendered by two of our Fellows, whose lives are intimately associated with the history of this city of Monroe, and who are justly entitled to our grateful memory.

The year 1895, was memorable in the history of the Society for it was in that year that the bill "to regulate the practice of medicine and to create a Board of Medical Examiners," which had been enacted into a law by the Legislature of the State in the spring of 1894, had become effective. The Society then assembled in extra session in New Orleans to nominate the members of the Board who were to inaugurate this new relationship with the State. By the provisions of this act the Louisiana State Medical Society became the active agent or executor of the law in regulating the practice of Medicine in Louisiana, and the Society became an organic part or instrument of the State Administration in discriminating between the qualified and unqualified practitioners of medicine. I need not insist upon the epochal character of this law, defective as it was, and still is, in some of its provisions. Suffice it to say that it has exercised a powerful influence in purifying the ranks of the profession, in elevating the standards of medical qualification and thereby insuring the better protection of the people against the incursions of the predatory horde of quacks, irregular therapeutic culturists and ignorant practitioners who would fatten and flourish at the expense of the suffering, credulous people of the State. I recall the enactment of this law not merely to quote an event, at that time, of the greatest importance to our organization and the people of this State, but to avail myself of the opportunity that it offers while here, in this enlightened, progressive and hospitable city of Monroe, to mention the name of two of our fellow members, residents of your city, whose distinguished careers in their public and professional relations have shed luster upon its citizenship and brought honor to their professional brethren. For it is to your beloved fellow citizens, Drs. A. A. Forsythe and I. J. Newton, that I refer.

It was Dr. I. J. Newton, an ex-President of the Society, who, as chairman of the committee on legislation and of the State committee of one hundred, of our State Society, not only framed the bill, but pushed it through to a successful issue in the face of an obstinate and aggressive opposition which had gathered in the general assembly of 1894, to defeat the bill.

As the presiding officer at that time, I shall always remember Dr. Newton's services with special gratefulness. I recall always his fine personality, his keen knowledge of men, his political insight, his persuasive eloquence, his mastery of parliamentary law and his popularity based upon his genial capacity to adapt himself to all his environments. In his loyalty to the purposes of this Society, he did not hesitate to sacrifice his personal and professional interests at home, where he was always wanted by a numerous clientele, and subjected himself not only to great inconvenience but to a loss of time and money in order to discharge his duties—the duties entrusted to him by the Society.

During the critical day of the debate in the House when the skies were ominous with black clouds and the issue doubtful, Dr. Newton was in the field leading our forces at Baton Rouge, striving gallantly to stem the tide of opposition which the enemies of progress and of the public weal had assembled to defeat the bill. It was at this juncture that another splendid doctor of Monroe, Dr. A. A. Forsythe, then mayor of your city, unsurpassed in the affections of his people for his extraordinary devotion to their interests as well as for his ability as a physician,—joined with Dr. Newton and with him did yeoman service in rallying all the available forces in and out of the legislature, to the support of the bill. It was largely through the personal influence and the fine generalship displayed by these two devoted members of our profession in your city, that the victory was won and that the Act "to regulate the practice of medicine in Louisiana," has remained one of the bulwarks of the people against the encroachments of arrant quackery, unrestricted license and abuse in the practice of medicine in this State.

Dr. Forsythe has long since passed away, he is now far beyond the hearing of my voice, but the grateful accents in which his name is uttered will surely harmonize and keep rhythm with the heart throbs of the people of Monroe who loved him and honored him for what he was to them. It is seldom that a leader in civil life can command such complete mastery of his environment and the unlimited confidence of his constituents as he did, and as long as he did. But he loved his people with an intensity and singleness of purpose that an affectionate father holds for his only child, and they knew it! Dr. Forsythe's attachment to the city of Monroe and to the welfare of his people, amounted to a passion that seemed to rule all his thoughts and dominate all his acts, to the very end of his extraordinarily useful life. I remember him well even as an undergraduate at the medical school at Tulane in 1887, and in the many notable incidents that characterized his administration during the sixteen years that he was Mayor of Monroe, I recognize the same traits of character that he displayed in his earlier years,—the intelligence, the uncompromising integrity, the fearless courage and the indomitable will with which he guarded the trust reposed in him by the people of his community,—

"When civic strife ran fierce and high,
His was the storm-assuaging speech
That made the wordy tumult die
And linked the neighbors each to each."

It is pleasing to note that notwithstanding the arduous time and thought-absorbing exactions of his public duties, Dr. Forsythe was always a doctor of medicine and never lost touch with his profession and its interests, which he served energetically when called upon, and that he put to good use his knowledge of sanitation for the benefit of his community. It is therefore, with pride in our professional calling and in the versatility of its adepts, that we meet in a city which is so progressive, so dynamically saturated with the spirit of modern civic development and so rich in all the endowments that Nature and man have given it, and which has been strengthened in the foundation laid for its present

and immeasurable prosperity,—by a member of our profession. For Dr. Forsythe while attaining the greatest heights of efficiency and usefulness in an administrative capacity as your chief executive, during the many years that he was the Mayor of Monroe, was always a doctor,—loyal, good and true,—

"One on whom God had set his sign,
The well beloved of all his peers,
But by the poor deemed half divine."

And now that I have recalled the conspicuous services rendered to our organization by the two distinguished citizens of Monroe, who have honored our membership by contributing so unselfishly, so ably, and so generously to the support and advancement of medical progress, and, in this way, to the welfare of their people,—allow me to renew in 1926, and in these auspicious surroundings, the sentiments of grateful appreciation that I had the honor to convey to them, in behalf of the Louisiana State Medical Society, thirty-one years ago.

And, again, now that I see that my good friend, Newton, has come to grace this occasion with his presence, I will permit myself to speak a word of greeting and of welcome to him, in your presence, though I fear in so doing I may ruffle his modest sensibilities. Three decades and over have rolled by and the chariot of Time has left deep furrows in the road that Dr. Newton and I have traveled to reach this stage of life's journey. Tomorrow we shall move on again, each one to go his way, whither or where, we do not know,—but tonight we alight and rest by the roadside that we may enjoy together that rare privilege of viewing from this height the rich field that has been harvested by our successors from the seed that we helped to sow with the men of 1895.

Dr. Newton: As an old comrade in the early campaigns of the Louisiana State Medical Society for medical progress, and for the betterment of our profession in Louisiana, I salute you in the name of the veterans of 1894-1895, and rejoice with them that you have reached a reward far greater and sweeter than all the medals, crosses and other glittering decorations that a more militant or ostentatious organization could have pinned upon your breast; for yours is a higher prize, that badge of merit that is wrapped around the heart by the caressing and loving hands of the people whom you have served and whose affections you have won through a life of service and devotion to their happiness and welfare.

As we approach the winter of life and see the autumn leaves falling about us, we are reminded of the Hippocratic admonition that "Life is short, Art is long and the opportunity fleeting." May I not apply to you, the poet's rejoinder,—

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in shadows on the dial.
We should count time by heart throbs; but he most lives,
Who thinks most, feels the noblest, acts the best."

THE MORE COMMON INJURIES TO THE FEMALE PERINEUM AS A RESULT OF CHILDBIRTH.*

TREATMENT OF SAME.

W. D. PHILLIPS, M. D.,
NEW ORLEANS.

The parturient woman is necessarily subjected to many dangers, modern obstetrics has eliminated some of these, but from the standpoint of morbidity, I doubt if there is any complication which is more important than the injuries to the maternal soft parts at time of delivery. The

*Read before the Orleans Parish Medical Society, April 26th, 1926.

possibility of infection is very great; the annoyance of loss of control of either bladder or rectal contents is most distressing and the symptoms which result from later uterine displacements are so marked that I cannot help from thinking that should those of us, doing obstetrical work, keep constantly before us all of the possibilities of injuries to the perineum that we may at least diminish the suffering which some of these cases would have otherwise.

The female perineum is formed of muscles and fascia and is perforated by three openings, the urethera, vagina and rectum, the rectum being the only orifice which is protected by a true and distinct sphincter muscle, the sphincter ani, which is a small muscle arising from the coccyx, completely encircles the rectum and is again attached to its point of origin—its function being to control the rectal contents—in this function it is assisted by the internal sphincter muscle, which is not a true distinct muscle, but a few muscular fibres blended with the walls of the rectum. The levator ani muscle is another important structure forming the perineum; it has two points of origin—one point of origin being from the back part of the neck of the pubis and the other portion arises from the white line which is designated as a point of division of pelvic fascia; from these two points, the muscle fibres extend downward and blend with the walls of the vagina and rectum and finally the largest portion of fibres are attached to the coccyx. The levator ani is the real muscular body of the perineum, its function being to maintain in position the uterus, rectum and bladder. In this important function, it is assisted by the pelvic fascia—uterine ligaments and a group of superficial muscles.

Normally, the uterus is well up in the pelvis in a position of slight anteflexion and it is held in this position by the two supporting planes of the pelvis; the upper one being formed by the sacro-uterine ligaments posteriorly—the utero pubic fascia plane anteriorly and the broad ligaments laterally. The lower plane being formed mostly by the levator ani muscle and surrounding fascia—with this normal support the uterus, rectum and bladder remain in position until pregnancy and later delivery takes place, a laceration or relaxation results and the normal relationship of the muscles and fascia is disturbed, resulting in various displacements depending upon the type and extent of the injury to the muscles and fascia.

I do not attempt even to suggest that injury to these structures can be eliminated, but I do believe they can be minimized and even though this is not possible, their prompt and careful treatment will prevent more serious conditions at a later time.

As to the frequency of perineal injuries De Lee has found that 70% of primiparae have the so called 1st degree laceration, 25% of primiparae and 10% of multiparae have lacerations extending well into the perineal body and in 10% the injury exposes the sphincter ani, so called 2nd degree laceration, and only in operative cases does a complete laceration occur.

In my own experience a check on a series of more recent cases convinced me that I did have a very large percentage of first degree lacerations in primiparae in spite of every attempt to prevent same. The percentage of lacerations in multiparae was small and when they did occur, were slight ones except in cases where forceps were used.

As to the predisposing causes of lacerations or relaxation may be mentioned, diseases of the pelvic outlet, lack of elasticity from previous operative scars or constitutional conditions, necessity for rapid delivery with imperfect dilatation; a narrow pubic arch by forcing the head back into perineum, or unfavorable position of the foetal head as occurs in face, brow, forehead or posterior rotation of the occiput,

all of these tend to cause injuries of more or less severity.

I believe that we should resort to every known means of preventing injuries to the perineum, numerous suggestions regarding this have previously been made, such as slow delivery, preliminary dilatation of levator ani muscle, holding back on the presenting part with one hand and supporting the lower portion of the perineum with the other hand, the condition of the fetal heart sound being the guide as to the time permitted to obtain sufficient dilatation; another important step is to deliver the head in forced flexion, this presents to the parturient canal the smallest circumference of the head.

The use of some form of anesthetic at time of delivery is another means of preventing laceration. I use in about 95% of my cases nitrous oxide gas or ethylene, and I am sure it has been responsible for a considerable diminution in the percentage of forceps cases and by this means, the more extensive perineal lacerations have been prevented. In cases requiring podalic version very often extensive lacerations result from the use of the short rubber glove and long-sleeve gown, instead of the long rubber glove and short-sleeve gown which will materially diminish trauma to the soft parts.

In all cases of obstetrics, especially in primparae, we should anticipate lacerations and be prepared to handle them when they do occur.

Proper preparation of the case should be demanded, and in this connection it seems to me that the hospitals should consider it routine to give all obstetrical cases an enema before delivery, and not wait until receiving orders from the obstetrician to do so; I recall in my own experience one or two badly infected perineums as a result of failure to give enemas before delivery.

In some cases a laceration of perineum seems inevitable and we are confronted with the question, should we allow it to occur, or should we cut the perineum. It does seem the most practical thing to do and in my own work I use episiotomy very often, believing it is much easier to repair a clean incision than an uneven laceration. The value of this procedure was recognized by obstetricians years ago and numerous suggestions were made as to the direction of the incisions, some preferring the lateral or bilatereal, others the median or medolateral. I have had more experience with the latter.

In a recent statistical report of the Chicago Lying-in Hospital it is stated that episiotomy is done in 35.7% of the cases.

If lacerations do occur, they are usually classified into: Lacerations of vulva. Lacerations of the anterior wall and lacerations of the posterior wall.

Posterior wall lacerations are further sub-divided into:

1st. Incomplete. A. Median.
B. Lateral.

2nd. Complete.

Median incomplete lacerations are usually superficial and may be repaired while waiting for the placenta to become detached, number 2 or 3 chromic cat gut being used. Lateral incomplete lacerations are more extensive and there is usually some injury to the lifting portion of the levator ani muscle; better results will be obtained in these cases if the repair is done after delivery of the placenta and under an anesthetic. A large gauze pack in the vagina will partly control the slight bleeding and keep the operative field dry. In the more extensive or complete lacerations where there is injury to the sphincter ani muscle and possibly the rectum itself, much better results will be obtained if the repair is done 12 to 24 hours after delivery, this permits the primary oedema to subside; the patient being placed on some form of table and completely anesthetized. As to the operative technique, in the incomplete cases approxi-

mation of raw surface and obliteration of dead spaces are the main points to be considered. If the rectum has been injured, I have had better results in the recent cases by suturing the tear in the rectal wall, first with interrupted linen or silk sutures, after these are placed the operative field is cleaned with alcohol and the operator's gloves are changed, as preventing contamination from the rectum is almost impossible. A second layer of Lembert (cat gut) sutures are next placed, and then the torn edges of the sphincter muscle are located and sutured with No. 1 or 2, 20 day chromic cat gut, after this the remaining wound is closed, according to the type of injury; the raw surfaces being approximated. Cat gut would be my choice of suture material unless infection was feared, and in that instance, silk worm gut may be used.

It has been my experience that the results in primary perineorrhaphy has been uniformly as good as the secondary perineorrhaphy.

In a brief review of a series of a hundred recent extensive repairs, I have had two which required secondary perineorrhaphy, and in both of these cases there was an infection of the perineum which I attributed to the fact that the patient did not have an enema before delivery.

I follow the practice of repairing all lacerations during the first seventy-two hours after delivery unless condition of patient is so desperate as not to permit same. I think lacerations of the anterior wall should receive the same attention as posterior wall lacerations, as by so doing, serious bladder displacements will be prevented. Should failure of the primary operation occur, or for certain reasons the immediate repair was not done, a secondary perineorrhaphy should be done, and in this connection I wish to call attention to a condition spoken of as "relaxation," which is nothing more nor less than an over stretching or tearing of the muscular fibres of the perineal muscles, without any visible injury to the mucous membrane of vagina. This condition is important, because the symptoms produced from it may be just as extensive as in some lacerations, and the obstetrician is frequently blamed by the patient, when at a later time the patient is told that perineorrhaphy is necessary, when in reality, there was nothing which could have been done at delivery to prevent it.

The time at which secondary perineorrhaphy should be performed has been the cause of considerable discussion. Some operators prefer early repair and others late repair. I believe the extent of the laceration and symptoms produced should be the deciding factor. I do not advise repair of all slight lacerations, but in cases in which the lifting portion of the levator ani has been injured, associated with a marked relaxed vaginal outlet, probably a cystocele and rectocele or uterine displacement, should be repaired, as by this means more serious uterine displacements may be prevented. In complete laceration, the symptoms of loss of control of the rectal contents is so annoying, that the patients demand relief and a repair may safely be done four to six months after delivery. The operative technique of secondary perineorrhaphy has been described so often that I will not dwell for any length of time on that subject. The cardinal points are the exposure and suturing of the muscles and the obliteration of dead space. The postoperative treatment of perineorrhaphies is important; I personally prefer the dry method of treatment. After the operation some dusting powder is applied to perineum; I use stearate of zinc. The patient is irrigated after voiding with some antiseptic solution, the catheter is not used unless absolutely necessary, no douches are given until the 7th or 8th day and only then when the discharge is offensive. A sterile pad is kept against the perineum at all times. The temperature chart is watched closely and a continued elevation of tem-

perature should cause us to look for infection. In the incomplete laceration, the bowels may be moved at any time. In the complete lacerations, better results will be obtained by keeping the bowels from moving for a period of six to eight days. Some mild opiate as paregoric may be given and a diet consisting of albumin water, fruit juices and strained broths may be given; on the sixth or eighth day a large dose of oil is given and the nurse is instructed to give the patient an oil or glycerine enema, through a small catheter, when there is a desire for bowel movement this will enable the patient to have a soft bowel movement without excessive strain on the suture line.

Finally, in conclusion, I urge preventing lacerations whenever possible.

The more frequent use of episiotomy.

The immediate repair of all laceration whenever the condition of patient will permit same and the early secondary perineorrhaphies in extensive lacerations with beginning bladder and uterine displacements.

DEMENTIA PRAECOX.

CLARENCE P. MAY, M. D.,

Clinical Director, East Louisiana State Hospital, JACKSON, LA.

On April 29th, 1926, a column appeared in a New Orleans newspaper under the heading, "Olson Declares Dementia Praecox, Chief Crime Cause." Therein, reference was made to an address by a Chicago jurist to members of the Era Club.

The contribution is of interest particularly because it contains statements which are apt to confuse and mislead.

Those concerned with modern principles of prevention, study and treatment of nervous and mental diseases are becoming more convinced that the solution of many difficulties lies in *education*—education of parents and children. Dissemination of precise, reliable information is of inestimable value in furthering education.

Inevitably, in an art and science which is broadening and developing as rapidly as neuropsychiatry, extremism and radicalism are certain to appear. Radical and extreme tendencies, views and practices should be scrutinized with the utmost caution and definite, trustworthy proof of the real value and worth of all theories and treatments should be insisted upon before acceptance and usage is permitted.

That there exists, even in its rudiments, a field of knowledge, the practical application of which "would see the end of crime in a period of sixty years," is merely an assumption.

Dementia implies permanent deterioration of the mental faculties. Dementia praecox is a mental disease which usually develops about the age of puberty and terminates in a peculiar, though variable, state of mental deterioration. Since some of the cases occur considerably later than the adolescent period it may be best to regard dementia praecox as a disease in which deterioration is the precocious manifestation rather than an individual in whom the illness is precocious. According to Kraepelin, sixty percent of the cases appear before the 25th year and rarely does it occur after the age of thirty. Dementia praecox is not defective emotions, though it always causes emotional impairment.

Symptoms of dementia praecox are: Personality alterations, seclusiveness or some other abnormalities of instincts and feelings; interest defects and discrepancies between thought and behavior; blunting of the emotions—indifference or silliness; suspiciousness and delusions of interference, control and persecution; hallucinations or false perceptions; odd and impulsive conduct; disorders of the will, judgment and attention; numerous, peculiar somatic complaints.

A number of factors play a part in the production of dementia praecox, but there

is, as yet, no known single cause or group of causes. There are no changes in the nervous system to which the condition can be definitely ascribed.

Accurate diagnosis is by no means always simple, especially in the early stages of dementia praecox.

In dementia praecox the outlook for complete recovery is unfavorable though some cases become arrested—an adjustment is effected—and the afflicted individual may continue life on a lower mental plane.

There is no known curative treatment for dementia praecox.

Feeblemindedness, mental deficiency or amentia is the expression of structural physical or nervous system defects. The manifestations are discoverable at birth, or very shortly thereafter, and the mental faculties do not develop. Feeblemindedness is a lack of mind. Dementia is a breaking down of mind.

Many crimes are committed by those suffering with dementia praecox and feeblemindedness. This is also true of other types of mental deviates.

The *chromosome* theory is a very attractive, though a complicated one and too lengthy to permit of adequate discussion here; those especially interested are referred to works on physiology, bio-chemistry and chemical pathology. Chromosomes are not blood particles; they are bodies or "threads" developed during cell division and are believed to contain material which conveys hereditary characteristics. "That over 1,000,000 different chromosomes, carrying varying numbers of traits, are present in the human race" is a theory which, in the light of present day knowledge on the subject, can best be met by the challange—prove it.

A vast field of endeavor awaits those who desire to eliminate crime by eradicating physical and mental defects. Such defects make for social gravitation, and as marriage usually occurs in the same social caste, defects tend to concentrate in the next generation—always something lower is produced. This is the process by which civilization purges itself of undesirable characteristics.

In civilizations less abundantly supplied and equipped than our own the unfit would have been eliminated. There has been a tendency to permit a stasis to develop in the lower levels of society. Because of this stasis and the present differential birth rate, nature alone may be unable to perform the task of eliminating the defective and unfit.

CHRONIC BRONCHITES WITH HEMORRHAGIC SPUTUM, OF NON-TUBERCULAR ORIGIN.*

ALDO CASTELLANI, M. D.,

Professor of Tropical Medicine, Tulane University of Louisiana,

NEW ORLEANS.

For a number of years,—since 1903,—both in the Tropics and in the Temperate zone, I have endeavored to call attention to the importance and comparative frequency of a group of parasitic bronchial and bronchoaveolar conditions which often closely simulate pulmonary tuberculosis. These conditions may be separated into two large groups, (a) due to animal parasites or bronchozoiases; (b) due to vegetal parasites, broncho-mycoses. They may be classified as follows:

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A.	Due to animal parasites (Bronchozoiases)	(1)	Protozoa	1. Broncho-spirochaetosis 2. Broncho-amoebiasis
		(2)	Metazoa	Broncho-paragonomiasis
B.	Due to vegetal parasites (Broncho-mycosis)	(1)	Fungi imperfecti	1. Broncho-nocardiasis
			Synonyms—	Broncho-streptothricosis Broncho-cohnisstreptothricosis Broncho-actinomycosis Broncho-discomycetosis
				2. Broncho-anaeromycosis 3. Broncho-moniliasis 4. Broncho-cryptococcosis 5. Broncho-hemisporosis 6. Broncho-sporotrichosis
		(2)	Ascomycetes	1. Broncho-saccharomycosis 2. Broncho-endomycosis 3. Broncho-oidiosis 4. Broncho-aspergillosis 5. Broncho-penicilliosis 6. Broncho-acremonelliasis 7. Broncho-cladosporiosis 8. Broncho-accladiosis 9. Broncho-sporotrichosis
		(3)	Phycomycetes	Broncho-mucocormycosis

I will limit myself today in briefly touching upon one of these conditions, namely, broncho-spirochaetosis.

Synonyms. — Pulmonary spirochaetosis, broncho-spirochaetosis, Castellani's bronchitis (Galli Valerio), Spirochétose broncho-pulmonaire de Castellani (Violle), *Bronchite* sanglante (Violle).

Definition.—Broncho-spirochaetosis, sensu lato, is a term used to cover all bronchial and broncho-pulmonary conditions associated with the presence of a large number of spirochaetes in the sputum.

History.—The history of *Broncho-spirochaetosis* is, briefly, the following: In 1904, in Ceylon, two natives came to consult me for recurrent *haemoptysis.* I kept them under observation for many months, but never succeeded in finding the tuberculosis bacillus. The sputum, instead of the bacillus of tuberculosis, contained an enormous number of *spirochaetes;* in fact, in the bloody portions of the expectoration these parasites were practically the only organisms present. The spirochaetes almost completely disappeared during periods of quiescence, to reappear again in huge numbers every time the symptoms became acute. I came therefore, to the conclusion that there was probably a form of hemorrhagic bronchitis of spirochaetic origin. Later, I came across many other cases, and my work was confirmed by Branch in 1907 in the West Indies, and by Jackson in 1902, and in the Philippine Islands. In 1909 Waters described numerous cases of the diseases occurring in India, and Phalen and Kilbourne a case in the Philippine Islands where, in 1911, Chamberlain recorded 2 more cases.

In 1913 Chalmers and O'Farrell carried out an investigation on the malady in Sudan, and succeeded in reproducing it in a monkey. In 1914 Taylor investigated the condition in Uganda. In 1915 Fantham published a classical paper on *Spirochaeta* bronchialis, studying it completely from a morphological point of view, and described its granular stage and the intracellular forms of the parasite.

In the same year Macfie reported cases from West Africa, and Galli-Valerio recorded several interesting cases of the malady in Switzerland, and Lurie and myself one in Serbia. In 1917, Violle first noted the affection in France, and a number of cases were reported by Bine, Dide, and Riberau, by Netter, Dalimier, Barbary,

and others. In 1919 Farah described several cases in Egypt, and Alcock a case occurring in a British soldier, in Northern Italy. Villa, and Corvetto, and, more recently, many other observers have recorded cases in South America; Clark and Facio in Central America; Mendelson in Siam; Levy, Bloedorn, and Houghton in North America; Broughton, Alcock, and Browne in England; and Iacono, Trocello, and others in Italy. Recently an interesting communication on *Broncho-spirochaetosis* in China has been published by Faust; Mouchet and Van Nitsen have found the disease in Katanga, and De Mello and De Andreds have reported cases from Portugal. Special mention must also be made of the important, very complete, paper by Farah in the "Journal of Tropical Medicine," April 2, 1923. The important work by Johns and Maes must also be mentioned.

Geographical Distribution.—The disease has a cosmopolitan distribution but it is apparently more common in certain parts of the Tropics and sub-tropics than in the Temperate zone. It has been reported from practically every country in the world and during recent years numbers of cases have been placed on record in this country.

Etiology.—Various types of spirochaetes found.

The spirochaetes found, as I noted in my very first paper, may be of very different morphological appearance. In the present state of our knowledge, I think that the following classification might be accepted. The spirochaetal organisms present have a few spirals of different size; spirochaete sensu stricto; a second group, the spirochaetal organisms have numerous small equal waves close together—treponema type. The first group may be divided into sub-groups: if the spirochaete is very delicate — spirochaete bronchialis s. minuta. If the spirochaete is coarse, s. bucculis, spirochaete vincenti, etc.

With regard to the spirochaete which I called bronchialis in 1907, it has been thoroughly studied by the well-known protozoologist, Professor Fantham.

The spirochaete is extremely polymorphic; its length varies between three and thirty microns, its breadth between two-tenth and six-tenths microns. Fantham states that of two principal types found, those seven to ten microns and those between fourteen and sixteen microns, he believes that the former originate by a transverse division from the latter.

Spirochaete bronchialis, according to Fantham, Chalmers, and O'Farrell and Taylor, differs from the common mouth spirochaetes in the following points:

1. It is more actively motile.
2. It dies very quickly in fresh preparations of sputum.
3. It is stained with more difficulty.
4. According to Fantham, there is an intracellular stage, which is absent in the oral parasites.

Spirochaeta Minuta.—This is an extremely minute spirochaete which I found in certain cases of broncho-spirochaetosis following spirochaetic rhino-pharyngitis. It is very delicate, more delicate than s. bronchialis. It can be put in evidence by the ultra-microscope, or by staining with various modifications of Romanowsky, the best for this particular spirochaete being apparently Jenner's modification. Silver methods of staining (especially using Fontana-Tribondeau's technique) give good results. In preparations stained with Romanowsky, or other modifications of this method, the organism takes often a pinkish-red or purplish tinge. The length of the organism varies from three to ten or twelve or more microns. The beginner should be careful not to mistake for spirochaetes undulating fibrin threads, particles of detached ciliated epithelium and detached cilia.

Spirochaeta Vincenti.—A description of this organism was never given and the

term has been applied to the most different spirochaetal germs. The modern tendency is to limit it to the more coarse type of oral spirochaetes.

Organisms found together with the spirochaetes.—It is seldom, if ever, that the spirochaete is found alone in the lesion. It is usually accompanied by various bacteria: streptococci, pneumococci and, in addition to the so-called fusiform bacillus, also an organism which I have called macro-vibrio is often present. The fusiform bacillus is a long fusiform organism; the macro-vibrio of Chalmers and myself is curved, comma-like, at times banana-like.

Predisposing Causes.—A chill often acts as a predisposing cause.

Method of Infection.—According to Chalmers and others, infection takes place in most cases from affected to healthy persons, the spray exhaled in coughing being contaminated with the spirochaetes or with the resistant coccoid bodies. According to other authorities, *spirochaeta bronchialis* and the other spirochaetes found in cases of broncho-spirochaetosis are present in the mouth; a chill, an operation, etc., may decrease the organic resistance of the carrier and increase the virulence of the organism in a way somewhat similar to what is the case of pneumococcus and other micro-organisms.

Experimental Reproduction. — Chalmers and O'Farrell reproduced the Sudan type of the disease in monkeys. Attempts to infect guinea pigs always failed. The putrid type of the condition has been experimentally reproduced in rabbits by intra-bronchial injection of material from dental caries containing innumerable spirochaetes and also fusiform bacilli.

Morbid Anatomy and Histopathology.—The morbid anatomy and histopathology of broncho-spirochaetosis have not yet been completely investigated. I have seen three autopsies and in all of them there was a patchy consolidation of both lungs and, in two of them, several small foci of necrosis the size of a small pea to a cherry. The cavities varied in size up to one centimeter in diameter. The mucosa of the bronchi was swollen and injected but no bronchetsiae were present. Some of the peribronchial glands were enlarged but in none was there any presence of caseation. The microscopical examination of stained sections shows well marked infiltration and, when the Levaditi Method has been used, large numbers of spirochaetes are seen. It must be noted, however, that in addition to spirochaetes, other organisms are usually present: cocci, streptococci, also fusiform bacilli and organisms of the macro-vibrio type.

Symptomatology.—Two types of the disease may be recognized: acute broncho-spirochaetosis and chronic broncho-spirochaetosis.

Of the first type, two varieties have been described: the acute bronchial or influenzal variety, the pneumonic variety.

Chronic type: the following principal varieties are now generally recognized: (1) With muco-purulent hemorrhagic sputum. (2) With purulent expectoration. (3) With putrid expectoration. Two other varieties may be mentioned: the asthmatic variety which has been studied principally by Farah, and a variety following on rhino-pharyngitis spirochaetica as described by me.

Acute broncho-spirochaetosis.—This type at times resembles influenza. The onset is often abrupt, the patien feeling chilly and complaining of rheumatoid pains all over the body and developing fever which generally is not very high. The fever may last ten to twelve days. The patient coughs a great deal and expectoration is scanty, muco-purulent, very seldom containing traces of blood. In most cases the general condition of the patient is hardly affected, in others there is great prostration. In the

pneumonic type there may be signs,—generally not very typical,—of lobar pneumonia, but this condition does not resolve and the patient is generally discharged from the hospital as a case of unresolved pneumonia.

Chronic forms of broncho-spirochaetosis.—Muco-purulent, or muco-hemorrhagic type. The onset is often quite insidious and slow, the patient has a chronic cough which is at times more severe in the morning. Sometimes genuine attacks of hemoptysis occur, one or two teaspoonfuls or more blood being brought up. In some cases there is no fever, in others a serotine hectic-like fever may be present. Occasionally the rise in the temperature takes place in the morning and not in the evening. In other cases the temperature chart is most irregular. The physical examination of the chest may reveal little but at times clear signs of patchy consolidation are present. The general condition of the patient may remain fairly good for a long time though a certain degree of anemia is often present. In a few cases severe rapid wasting takes place. The course of this type of the disease may be prolonged with periods of great improvement and even apparent cure. The two original cases I studied in Ceylon in 1905 were still alive when I left the Island in 1915.

X-ray Examination.—In mild cases, the X-ray examination shows little or nothing. In several cases the picture may be suggestive of tuberculosis. It may show mottling areas of patchy infiltration and diffuse peribronchial thickening.

Purulent Type.—In this type the patient has often a high intermittent fever and cough up a very large amount of purulent expectoration, occasionally mucus with blood. In these cases bronchitasiae are often suspected but in my experience they are not common and no vomica takes place. It is interesting to note that in a certain number of cases of the purulent type the spirochaetic organisms have a treponema appearance.

Putrid type.—The symptoms are very similar to those seen in the purulent type, but the expectoration has a very offensive odor.

Asthmatic type.—In the asthmatic variety to which, as I have already said, Farah has paid much attention, the patient shows signs of chronic bronchitis and now and then has an attack of typical asthma.

Broncho-spirochaetosis following Rhino-Pharyngitis.—Some years ago I described rhinitis rhino-pharingitis spirochaetica which clinically can hardly be distinguished from an ordinary attack of coryza. In some cases, after the coryzal symptoms have disappeared or during the coryzal period, bronchitis develops with muco-purulent expectoration containing a very large number of spirochaetes identical with those found in the pharynx and nose. The spirochaete, in most cases of this type, is extremely delicate, so much so, I gave it the name of Spirochaeta Minuta.

Illustrative Cases.—To avoid the personal equation, I will report a case thoroughly investigated by Bloedorn and Houghton and published in the Journal of the American Medical Association, Volume 76, also a case described by Iacono in the Journal of the American Medical Association, March, 1920:

Case 1. (*Bloedorn and Houghton.*)—A white man, aged 18, unmarried, was admitted to the hospital complaining of headache, pains in the back and shoulders, weakness, cough, and expectoration of blood-streaked mucus. Temperature 103, pulse 96, respiration 20. Teeth in good condition, no exudate on tonsils. Heart negative. Examination of the lungs disclosed only a few scattered rales at both bases, no impairment of resonance.

Clinical Course.—The patient continued to have fever with temperature varying from 100 to 102 in the morning, and 103 to 104.3 in the evening. Profuse night-sweats occurred with great regularity, and the patient during the first 3 weeks of his illness lost 20 pounds.

There was a slight cough and rather free expectoration of a thin, muco-purulent, blood-streaked sputum. The prostration during the course of the disease was not marked, and the patient stated that he felt fairly well, but weak. The case resembled so strongly, in its clinical course, a pulmonary tuberculosis, that every effort was made to confirm such a diagnosis. The laboratory findings, Roentgen-Ray findings, and physical examination, however, failed to demonstrate the existence of such an infection. Wassermann and Noguchi negative. During the course of the repeated sputum-examinations it was noticed that, while the sputum was negative for tubercle bacilli, there were constantly present a large number of spirochaetes.

The presence of these organisms was at first not regarded as significant, and it was only after repeated attempts to establish a definite diagnosis in this case that their presence was regarded seriously. Their constant presence in the sputum after the teeth had been cleaned and the throat cleared with a mild antiseptic gargle, together with the absence of a lesion of the tonsils or pharynx which account for their presence, appeared significant and strongly suggested the diagnosis of "bronchial spirochaetosis."

It was decided to try the effect of an arsenical spirochaeticide, and on the 20th day 0.6 gm. of neo-arsphenamin was given intravenously, and on the 21st and 22d days the temperature again rose to 101 in the evening. On the 24th day 0.5 gm. of neo-arsphenamin was given intravenously, following which injections of 0.9 gm. of neo-arsphenamin were given at intervals of 1 week, although the patient had shown no rise of temperature in the meantime, and was steadily improving. Following the injections of neo-arsphenamin the improvement in the patient was striking. The prompt termination of the fever, the rapid decrease in the number of spirochaetes and their ultimate complete disappearance from the sputum, the prompt cessation of the cough, and the disappearance of the blood from the expectoration, which itself became almost negligible in quantity, leave little room for doubt regarding the efficacy of these injections.

Two months following the onset of the disease, the patient had regained his loss of 20 pounds, had been up and about for several weeks, and was able to resume his original duties. Before discharge from the hospital he was given an injection of 10 mg. of tuberculin, following which he showed no reaction.

Case 2 (Iacono).—Miss E. B. No previous disease of importance. Present illness began 11 days before I saw her, with general malaise, rheumatoid pains all over the body, and dry cough. The fever remained high and continued for several days, then it dropped in the morning and assumed a serotine type. Rather suspicious subcrepitant rales were found upon physical examination of the chest, in the left apex, and this fact, together with the serotine fever and sputum tinged with blood, led the family doctor to suspect tuberculosis of the lungs. When I was called in, the patient was very pale and feeling very weak, upon examination of the chest, no zones of dulness were found. Moist and dry rales were present all over, but no crepitant ones. Pulse 90, pressure rather high. Heart normal. As regards the abdominal organs, the spleen was not enlarged, liver just palpable. Urine contained a trace of albumin, and there was a slight increase in the phosphates, and indican. Blood: red-blood corpuscles, 4,000,000 per cm.; leucocytes, 9.00; hemaglobin, 70 (Fleischl). As to the leucocytic formula, there was an increase in the eosinophiles and lymphocytes. No malaria parasites and no spirochaetes were found. Examination of the sputum for tubercle bacilli, negative. Several glucose-agar tubes were inoculated, but no fungus was grown. The microscopical examination of films from the sputum stained with Giemsa, revealed presence of a large number of spirochaetes of variable length, 5 to 20 microns, and with 3 to 6 undulations. In fresh preparations examined with the ultra-microscope, numerous very motile spirochaetes were seen. I made a diagnosis of *broncho-spirochaetosis* and prescribed the mixture recommended by Castellani, the formula of which is:

Tartar emetic	gr iii
Syr. tolu	℥l
Aq. chlorof.	ad ℥iii

1 teaspoonful in water every 2 hours.

Mixed Infections—Cases of mixed infections, tuberculosis and spirochaetosis, bronchomycosis and spirochaetosis are occasionally met with. It may be mentioned here that Breton and others believe that when in a tubercular patient, hemoptysis takes place, the hemorrhagic sputum is caused not by the bacillus tuberculosis but by a spirochaetic infection which has become engrafted on the tuberculor condition.

Diagnosis.—This is based on the microscopic examination of the expectoration collected after rinsing the mouth and gargling with sterile water. It is essential to carry out the examination on fresh sputum,

both using the dark ground illumination and also by staining with one of the modifications of the Romanowsky Method or the nitrate of silver staining methods such as the Fontana-Tribondeau, may be employed. The sputum, especially the hemorrhagic part of it, teems with spirochaetes, while bacteria are extremely few. The spirochaetes greatly decrease in numbers or completely disappear when the bronchial condition improves.

Differential Diagnosis. — The condition has often been confused with pulmonary tuberculosis but the examination of the sputum for tuberculosis bacilli will be negative and the animal inoculations will remain without any effect. The opthalmo- and cuti-reactions are negative in the great majority of cases. Occasionally, however, cases of mixed infection of tuberculosis and spirochaetosis occur. From bronchomycosis the affection is differentiated by the absence of fungi. Cases of double infection, broncho-spirochaetosis and bronchomycosis may at times be observed, though rarely. Spirochaetosis is easily distinguished from endemic hemoptysis by the examination of the sputum which will show absence of the ova of Paragonimus ringeri Cobbold.

Prognosis.—The prognosis, except in the very severe cases of the purulent and putrid types, is favorable *quoad vitam* but the disease runs a very chronic course and, although periods of great improvement may take place, a true spontaneous cure is practically unknown.

Treatment.—Two drugs have been found useful by myself and later by many others: Arsenic and Tartar Emetic,—the former has a much more powerful and rapid action than the latter.

Severe Cases—Arsenic in the form of salvarsan or neo-salvarsan should be given intravenously in 0.3 gram and 0.5 gram doses, once or twice a week, the technique being the same as in syphilis.

Mild Cases.—In mild cases oral treatment by various arsenical preparations and tartar emetic, may be carried out. I have found the following formulae useful:

1. Tartar emetic ..... gr. iii
   Syr. tolu. ..... ℥i
   Aq. chlorof. ad. ..... ℥iii
   1 teaspoonful in water every 2 hours.

2. Tartar emetic ..... gr. V
   Sodii bi-carbonate ..... gr. XXX
   Glycerine ..... ℥i
   Aq. chlorof. ..... ℥i
   Aq. ad. ..... ℥iii
   Sig. 1 teaspoonful t. d. well-diluted in water.

3. Liq. arsenicalis ..... mXXIV
   Tartar emetic ..... gr. ii
   Codein ..... gr. ii
   Glycerine ..... ℥i
   Syr. tolu. ..... ℥i
   Aq. chlorof. ad. ..... ℥VI
   Mise 4 ounces.
   1 tablespoonful t. d. well-diluted in water.

4. Tartar emetic ..... gr. ¼ to ½
   Sodii bi-carbonate ..... gr. X
   Glycerine ..... ℥i
   Aq. ad. ..... ℥iii
   Sig. ℥i t. d.

5. Tartar emetic ..... gr. 2-3
   Codein ..... gr. 2-3
   Syr. tolu. ..... ℥i
   Aq. chlorof. ad. ..... ℥VI
   Sig. tablespoonful t. d. well-diluted in water.

6. Tartar emetic ..... gr. 2-3
   Potass. iodide ..... ℥i
   Sodii bi-carbonate ..... ℥ii
   Glycerine ..... ℥i
   Syr. tolu. ..... ℥i
   Aq. chlorof. ad. ..... ℥VI
   1 tablespoonful t. d. well-diluted in water.

7. Sulphur ..... gr. iii
   Pul Ipecaq. co. ..... gr. ½
   Guaiacol carb (Duotal) ..... gr. X
   Sodii benzoate ..... gr. X
   Fiat pulv. .....
   i powder t. d. .....

Prophylaxis—As some of the spirochaetes causing broncho-spirochetosia are probably always present in the mouth, mouth-hygiene is of great importance and the teeth should be kept in good condition.

BRONCHO-MYCOSES.

Affections of the bronchi and lungs, associated with the presence of fungi in the sputum, are not at all rare, though comparatively little attention has been paid to them till recently. These conditions may be due to a variety of fungi, belonging to different species, genera, families, and orders, but from a practical point of view may be classified as follows:

1.—Due to fungi of the genus Nocardia Toni and Trevisan, 1899, Cohnistreptothrix Pinoy, 1911, and Anaeromyces Castellani, Douglas and Thompson, 1921; Malbranchea.

2.—Due to fungi of the genus Monilia Persoon, 1797; Oidium Link, 1890; Saccharomyces Meyen, 1833; Willia Hansen, 1904; Cryptococcus Gilchrist and Stoker, 1896; Coccidioides Rixford and Gilchrist, 1898.

3.—Due to fungi of the genus Hemispora Vuillemin, 1906.

4.—Due to fungi of the genus Aspergillus, 1729; Sterigmatocystis Cramer, 1869; Penicillium Link, 1908; Mucor Micheli, 1729; Rhizomucor Lucet et Constantin, 1900; Lichtheimia Vuillemin, 1904, Acremoniella.

5. Due to fungi of the genus Sporotrichum Link, 1809.

6.—Due to fungi of the genus Acladium Link.

7.—Due to fungi which have not yet been classified.

The symptoms are somewhat similar, whichever fungus is the aetiological factor. In mild cases there are signs of slight bronchitis with muco-purulent expectoration, in which the fungi are found. In severe cases the patient presents all the symptoms of phthisis, with hectic fever and haemorrhagic expectoration. Mild cases may get cured spontaneously; but they are often benefitted by potassium iodide.

The prognosis varies a great deal, according to the causative fungus; the cases due to Nocardia have the worst prognosis.

I will briefly describe a few of the broncho-mycoses I have mentioned, viz: broncho-nocardiasis, broncho-moniliasis, broncho haemisporosis, and broncho - anaeromycosis.

BRONCHO-NOCARDIASIS.

Broncho-nocardiasis is the modern term used to denote all bronchial and broncho-pulmonary affections due to fungi of the genus Nocardia, Toni and Trevisan, and the genus Chonistreptotrix Pinoy which were previously more commonly known as Streptothrix, Actinomyces, Discomyces, Oospora.

Two types of broncho-nocardiasis may be separated. One is characterized by the presence of fungal granules (sclerotia) in the sputum-granular broncho-nocardiasis.

In the other type no such granules are present — Agranular broncho - nocardiasis. The first type is still often referred to as Actinomycosis bronchialis, or pulmonalis and the second type as Pseudo-actinomycosis bronchialis or pseudo-actinomycosis pulmonalis. Before proceeding with the subject, it may be of advantage to give a few botanical data on the nocardial fungi. These fungi belong to the order Microsiphonales. This order is characterized by the mycelium being composed of fine bacilliform hyphae, usually 1 micron or less in diameter. They are, as a rule, gram-positive when young, and without distinct nuclei; they are parasitic or saprophytic.

The order Microsiphonales has the following families:

A.—Nocardiaceas Castellani and Chalmers, 1918 (Synonyms, Actinomycetes Lachner-Sandoval, 1898; Trichomycetes Petrusky, 1903).

Definition.—Microsiphonales with a mycelium.

Type Genus.—Nocardia Toni and Trevisan, 1889.

B.—Mycobacteriaceae Miehe, 1909.

Definition. — Microsiphonales without a mycelium.

Genus 1. Mycobacterium Lehmann and Neumann, with the diphtheria bacillus as a type.

Genus 2. Corynebacterium Lehmann and Neumann, with the tubercle bacillus as a type.

FAMILY NOCARDIACEAE.

Synonyms. Actinomycetes Lachner-Sandoval, 1898; Trichomycetes, Petrusky, 1903.

Definition. Microsiphonales with a mycelium.

Type genus. Nocardia Toni and Trevisan, 1889.

Classification: This family contains 2 genera:

A. Grows aerobically, easy of cultivation, and producing arthrospores. Genus 1, Nocardia Toni and Trevisan, 1899.

B. Grows best anaerobically, but can often grows aerobically, difficult of culture, and not producing arthrospores. Genus 2, Cohni-strepyothrix Pinoy, 1911.

The reader interested in mycology may find further particulars on these fungi in Castellani and Chalmers' "Manual of Tropical Medicine," 3rd edition, pages 1040-1062.

AGRANULAR BRONCHO-NOCARDIASIS.

(*Broncho-streptothricosis, Pseudo-actinomycosis*

This is one of the most serious types of Broncho-mycosis. It generally runs a chronic course, although occasionally acute cases are met with. The patient loses flesh, becomes anaemic, often has serotine fever; expectoration is at first muco-purulent, later tinged with blood; true haemoptysis may occur. The physical examination of the chest may reveal patches of dullness, crepitations, and pleural rubbing; occasionally, however, the physical examination will reveal nothing at all.

The microscopical and cultural examination of the sputum is most important, segments of thin, bacillary fungi will often be found, branching, at times acid-fast, at times not acid-fast but gram-positive. Aerobic and anaerobic methods of cultivation should be used, as some nocardias (cohnistreptóthrix) grow only anaerobically.

The treatment of these cases consists of giving potassium iodide in large doses internally and autogenous nocardia-vaccines by hypodermic injection. Occasionally this mixed treatment gives good results, but in my experience most cases do not answer to this or any other treatment I know of, and end in death.

GRANULAR BRONCHO-NOCARDIASIS.

(*Broncho-actinomycosis.*)

The clinical symptoms are very similar to those observed in Agranular broncho-nocardiasis, but the sputum contains small granules composed of an enormous number of thin mycelial filaments, mixed with some debris. This type of nocardiasis is more amenable to treatment than the agranular type, and potassium iodide in large doses is fairly frequently successful.

ILLUSTRATIVE CASES.

(*Agranular broncho-nocardiasis.*)

Case 1. European, male, 32 years of age, a planter in various tropical countries during the last 12 years. Two years ago he began complaining of slight cough, with very little expectoration. The physical examination of the chest revealed little, apart from a slight dimunition of resonance in the left supraclavicular region. Cuti reaction negative.

The sputum was examined 12 times for tubercular bacillus with constantly negative results. Instead a branching, gram-positive, partially acid-fast organism was present, which I succeeded in growing. A protracted course of potassium iodide treatment, combined with the subcutaneous ad-

ministration of autogenus vaccine, prepared with the fungus, was very successful.

Case 2. This is a most interesting case investigated at St. John's Hospital by Dr. Woodward, who has kindly allowed me to quote it and has supplied me with the following notes:

Captain served through the war, and after demobilization went to Thodesia where he had previously resided. In the early summer of 1922 he began to feel unwell and showed loss of weight, and had a cough and some expectoration. A few weeks after this, he started to come home on leave to England, and the condition progressed. On his arrival in England he came to see me and told me this history: He had lost a considerable amount of weight and brought up sputum that at times was bloodstained. He looked very ill, and appeared to be in a condition of rapid phthisis. On examining a direct smear of his sputum, I found it full of a net-work of branching rods, showing numerous ramifications, being acid-fast with Ziehl-Nielsson stain. He had an even temperature, for some little time, which varied from 100 to 101. Shortly after this he went under the care of a physician, who tried all sorts of treatment of a medicinal nature without its having the slightest effect on the condition.

My findings of nocardia (streptothrix) was confirmed in July last year by Dr. Benians, who inoculated a guinea pig intravenously. The animal showed considerable wasting, and was killed on the 16th day. Multiple nodules were scattered throughout the viscera. In August, 1922, specimens of the sputum were sent to me periodically, always showing the same microscopical picture. Owing to the presence of pyorrhoea in the patient, I was asked to examine his gums. I did not find the nocardia, but there were spirochaetes very largely mingled with fusiform bacilli.

The clinical picture showed a steady development, the patient continuing to go gradually down hill.

In November there appeared two pyemic abscesses—one in the neck and the other in the side. I examined the pus from both of these places, and in direct smears they both showed the streptothrix to be present in very large quantities. No other organism was seen, nor was there any growth obtained of any other organism.

He died in the month of November, 1922.

I find that the organism was markedly acid-fast with Ziehl-Nielsson stain, but after keeping, the color tended to disappear. It was gram-positive, and showed distinct variations of staining inside the rods. The organism from the sputum was at first anaerobic, and I grew it in a glucose broth. Later when I obtained the organism from the pus, it was aerobic and anaerobic and grew very much more easily on any media than when I had obtained cultures from the sputum. It showed a white, flowery-looking growth. I gave intra-peritoneal inoculation into a guinea pig and it died on the eighth day.

GRANULAR BRONCHO-NOCARDIASIS.

Case 1. A Serbian soldier, aged 23, presented all the usual clinical symptoms of pulmonary tuberculosis, great loss of flesh, serotine fever, bloody expectoration. The physical examination of the chest revealed patches of dullness with crepitations and pleural rubbings. The sputum was muco-purulent, occasionally tinged with blood. It contained at times some very small whitish granules the size of a pinhead, composed of an enormous number of thin, mycelial filaments, branching, gram-positive and partly acid-fast. The fungus grew fairly well aerobically on maltose and glucose Agar. The colonies developed slowly, were hard, and firmly attached to the medium. They were of a pinkish color, and gelatine was slowly liquified. Potassium iodide was administered in large doses and also hypodermic injections of an autogeneous nocardial vaccine, but without any marked beneficial result.

Case 2. Young Indian student, 20 years of age. His medical attendant sent him to me as he suspected tuberculosis, but he could never find the tuberculosis bacillus in the sputum. The patient was very thin and had serotine fever and sweatings; he coughed a great deal; the expectoration was at times muco-purulent, at times haemorrhagic. I had him cough, in my presence, into a sterile Petri-dish, and in the sputum, which was muco-purulent, I noticed several minute, yellowish bodies, or granules, which the microscopical examination revealed as composed of thin mycelial elements, gram-positive, but not acid-fast. I grew the fungus with great difficulty. Potassium iodide in very large doses (gr. xxx. 3 times a day) without any vaccine had an almost wonderful effect; within 5 weeks all the symptoms disappeared.

BRONCHO-MONILIASIS.

I first called attention to this bronchial affection in Ceylon, in 1905, and valuable work on the subject has been carried out recently by a number of authors, Chalmers, O'Connell, Farah, Macfie, Iocono, Taraknath Sur, Thones, Pollacci, Redaelli, Perin,

etc. The condition, however, is still little known, though it has been found in many tropical and sub-tropical countries, and also in temperate zones.

Pinoy has described cases in France, Pijper in South Africa, Macfie in West Africa, and Chalmers and MacDonald and Farah have observed a number of cases in the Soudan and Egypt. Taraknath Sur has made a thorough study of the disease in India. Iacono has found several cases in the south of Italy, and cases have recently been found in England by Douglas, Thompson and myself, and in America by Johns, Boggs and Pincoff and Simon. The condition appears to be caused by several species of the genus Monilia Persoon, usually *M. tropicalis* Castellani, *M. Pinoyi* Castellani, *M. krusei* Castellani, and *M. metalondinensis* Castellani.

BRONCHO-MALBRANCHEASIS.

Cultures on Glucose Agar white with duvet or a powdery surface, later become pinkish or reddish. The microscopical examination shows mycelium constituted of very thin hyphae 0. 7-1.5 micron, septate. The fertile hyphae contain cylindrical or oval thallospores at first hyaline, then pinkish.

The symptoms are identical to those found in agranular nocardiasis. The only case so far published is one described by Bolognesi, Churco, Pollacci and Narmoggi.

As regards the botanical characters of the genus Monilia, the original definition by Persoon is "stipitata aut effusa byssoidea. Fila Moniliformis articulata." These fungi are stated to be characterized by the sporophores being simple or sub-simple, and producing by constriction at their extremities a chain of large lemon-shaped conidia, often provided with a disjunction apparatus. The general tendency at the present time, however, is to extend the term "Monilia" so as to include all those organisms of the family "Oosporaceae Saccardo, 1886, the vegetative body of which (Thallus) in its parasitic life (in situ, in the lesions) appears as a mass of mycelial threads and free budding forms, some of the mycelial filaments being long and branched, and of rather large size, and often presenting arthrospores. In the saphrophytic life (cultures on the usual solid laboratory media) mostly yeast-like roundish or oval bodies are seen, while mycelial filaments are very scarce, or absent, and when present they are rather short and consist only of a few articles. Monilia fungi very often ferment glucose and other carbohydrates with production of gas.

For practical purposes Monilias may be conveniently classified, according to some of their biochemical characteristics, as follows:

1. Gas produced in glucose only: Monilia balcanica Castellani group.

2. Gas produced in glucose and levulose only: M. krusei Castellani group. Gas produced in glucose, levulose, and maltose: M. Pinoyi Castellani group.

4. Gas produced in glucose, levulose, maltose, and galactose: M. metalondinensis Castellani group.

5. Gas produced in glucose, levulose, maltose, and galactose: M. tropicalis Castellani group.

6. Gas produced in glucose, levulose, and saccharose: M. guillermondi Castellani group.

7. Gas produced in glucose, levulose, galactose, and saccharose and inulin: M. macedoniensis Castellani group.

8. Gas produced in dextrin, in addition to other sugars: M. pseudoloninensis Castellani group.

9. Gas produced in lactose in addition to other sugars: M. pseudo-tropicalis Castellani group.

10. Absence of gas fermentation in any sugar: zeylanica Castellani group.

It must be kept in mind that certain sugar reactions are not constant, and several species of Monilia may, after a time, lose their power to ferment some carbohydrates. Hence the determination of some species can be carried out only with strains very recently isolated. It must also be kept in mind that Monilias presenting the same biochemical reactions may differ enormously as regards pathogenicity. Some may produce a severe infection when inoculated into rabbits, others may be quite harmless.

Clinically, a *mild type* and a severe type of the malady may be differentiated, with, of course, a number of intermediate cases. In the mild type the general condition of the patient is good and there is no fever. The expectoration is muco-purulent, often scanty, and does not contain blood. The physical examination of the chest is negative or reveals only a few rales. The condition may last for several weeks or months, or get cured spontaneously, or continuing, may turn into the severe type.

The *severe type* closely resembles phthisis. The patient becomes emaciated, there is hectic fever, and the expectoration is often haemorrhagic. The physical examination of the chest may show patches of dullness, fine crepitations, pleural rubbing. This type may end fatally.

The treatment consists in giving potassium iodide, with which glycerophosphates and balsamics may be associated. It is interesting to note, however, that in a certain number of cases potassium iodide has practically no beneficial action whatever. Vaccines are occasionally useful.

ILLUSTRATIVE CASES.

Case 1. A. T. S., male, pensioner, born 1890, joined the British Army in 1914. While serving in 1916 noticed slight cough with scanty expectorations, but his general condition of health was fairly good. Ailment continued till December, 1921, when the sputum began to be bloody and the patient began losing flesh. Weight in July, 1919, was 11 stones, 4 pounds; March, 1922, 9 stones, 8 pounds; June, 1922, 8 stones, 13 pounds.

He was suspected to be suffering from tuberculosis and was sent to the Ministry of Pensions Hospital, at Orpington, on March 31, 1922, for observation. His general condition of health was fairly good, but he was very thin. The patient had a slight serotine fever of low type, 99 F. to 99.4, not influenced by quinine. There were not regular sweats. The cough was more severe in the morning than at night. The examination of the chest did not reveal anything very definite. A few coarse rales were present; the X-ray examination did not show any evidence of tuberculous lesions. Complement deviation test for tuberculosis bacillus, negative. Wassermann negative.

The sputum was examined for the tuberculosis bacillus many times—always negative. A fungus was grown with the characteristics of Monilia metalondinensis Castellani.

He was treated with potassium iodide and creosote, and all the symptoms disappeared. He was discharged from the hospital as cured, but we kept in touch with his family doctor, who wrote to us some months afterward that the patient was feeling well and was able to do a day's work.

Case 2. Col. A. S., while in India, developed symptoms of subacute bronchitis with muco-purulent expectoration and occasionally haemorrhage. He was diagnosed as a case of Broncho- moniliasis and sent home. I was able to confirm the diagnosis. He got well on potassium iodide and creosote. In this case the Monilia was of the Pinoyi type.

INOCULATION EXPERIMENTS IN THE LOWER ANIMALS.

In Ceylon I carried out a fairly large number of researches on the virulence of various Monilias and the experimental reproduction of Broncho-Moniliasis. More recently Douglas, Iacono, Redaelli, and others have worked on the subject in England and Italy. The results of these researches may be condensed briefly as follows:

1. A few monilia strains are non-virulent. Their inoculation into rabbits and guinea pigs by the sub-cutaneous, intravenous, intraperitoneal, intrapleural, intrapulmonary route does not kill either the rabbit or the guinea pig, and the inoculated

animals do not show any sign of sickness. These strains have generally been isolated from the air.

2. Certain monilia strains are virulent and kill the rabbit and guinea pigs, when inoculated intravenously or intrapulmonary, but do not produce any evident pseudo-tubercular nodular condition of the lungs.

3. Certain Monilias when inoculated intrapulmonary (and at times intravenously) produce a peculiar nodular condition of the lungs. For instance, if ½ or 1 cc. of a thick emulsion of Monilia metalondinensis Castellani strain C (isolated from a severe type of Broncho-moniliasis) is injected intrapulmonary in a rabbit through the thorax by means of a syringe and the animal is killed 15 to 20 days after, the post-mortem will show that both the lung which was injected and the lung which was not injected present numerous white nodules, which are generally larger in the inoculated lung. Some of these nodules may coalesce, forming a staphyloid mass. The invasion of the non-inoculated lung apparently is by the bronchi, which in many cases can be made out to be greatly expanded and in some places their wall has has given way. The histological examination of the smaller nodules, which are about ⅛ inch in diameter, shows that the center is composed of masses of small cells and polymorphonuclear leucocytes. Further out, the cells are fewer in number. This corresponds to the area of the degenerating expanded bronchicele. Still further out there is a ring of endothelial cells; many of them are phagocytic, containing smaller white cells, and there are a few large multinucleated giant cells. There are also in this ring a large number of eosinophile cells. At times the cells in the center of the nodules are markedly degenerated, the nodule becoming caseous. Stained with gram a section shows only a small number of monilia and few of the spores take the gram stain. Between the nodules there is no pneumonia in most cases, but there is some congestion and there is considerable increase of endothelial cells. In the small arteries the intima is greatly thickened. The above histological description is based on the researches carried out on the subject by Douglas, Thompson, and myself. The animal inoculations were performed by Douglas. The histological lesions found in experimental Moniliasis have been also thoroughly studied by Redaelli.

Diagnosis.—The diagnosis is based on the absence of the tubercle bacillus and the constant presence of Monilias in the sputum. It is essential that the sputum should be collected in sterile receptacles after the patient has gargled thoroughly with warm, sterile water and the sputum should be examined immediately. In certain cases the microscopical examination of the sputum shows spore-like, roundish or oval cells often presenting a double contour and occasionally some portions of mycelial threads. In other cases, the microscopical examination is completely negative, and the fungus can be found only by cultural methods. At any rate, it is impossible to make a definite diagnosis of Broncho-moniliasis without a cutural investigation, which should be carried out as follows:

A small amount of sputum is smeared on several tubes of glucose or maltose agar, which should be kept at a temperature of 22 to 25 C. for 2 or 3 days, when, in positive cases, white, rather large, roundish colonies will appear, easily differentiated, as a rule, with a little practice, from the colonies of cocci and other bacteria. To determine the species of Monilia present, the strain isolated should be further investigated by inoculating milk, gelatine, serum and the following carbohydrates-glucose, levulose, maltose, galactose, saccharose, inulin and dextrin; and animal inoculations in rabbits should also be performed to see whether the strain isolated is virulent or not, and whether it is capable of producing pulmonary lesions.

It is essential to remember that the mere presence of a monilia fungus in the sputum should never be considered sufficient to establish the diagnosis of Broncho-monilias. When a monilia is found in a sputum collected with all due precautions to avoid external contaminations and examined at once, there are 3 possibilities:

1. The monilia, though present in the expectoration, is not virulent and not pathogenic, and lives saprophytically in the bronchi. In such an event the monilia inoculated intravenously into a rabbit will be found to be non-virulent, and when inoculation is intrapulmonary it will produce no lesions in the lungs and no general infection.

2. The monilia, though virulent, may represent only a secondary invader, a secondary infection; in this case the intravenous injection of the fungus will kill the rabbit; the intrapulmonary injection will not cause any localized nodular affection in the lungs. It will induce a general fungus septicemia from which the animal will die.

3. The monilia is the real cause of the broncho-alveolar condition; in such cases the intrapulmonary injection into a rabbit will produce a very characteristic nodular condition of the lungs. When the animal dies spontaneously or is killed, 15 to 21 days after the intrapulmonary injection, both lungs (the one injected and the other in which no injection was made) are found to be studded with a large number of white nodules, containing the fungus. These white nodules are about ⅛ of an inch in diameter. In the intervening lung tissue there are signs of congestion, but no pneumonia.

The center of the small nodules is composed of masses of small cells, polymorph leucocytes—further out there is a ring of endothelial cells, many of them phagocytic and containing smaller white cells; and there are a few large multi-nucleated giant cells and a large number of eosinophile cells. The cells in the center of the nodule are markedly degenerated and the nodule is becoming caseous. Sections stained by gram show only a small number of monilias, and few of the spores take the gram stain. Between the nodules there is some congestion but no pneumonia, and there is a considerable increase of endothelial cells. In the small arteries the intima is greatly thickened. The invasion of the lung tissues (in the side not injected) apparently takes place through the bronchi. These can in many cases be made out to be greatly expanded, and in some places their wall has given way.

PRIMARY AND SECONDARY BRONCHO-MONILIASIS.

Primary Broncho-moniliasis should be distinguished from secondary Broncho-moniliasis, which fairly frequently develops in cases of tuberculosis and other chronic conditions, as shown by Chalmers, Macfie and Ingram, myself, and other observers. A diagnosis of primary Broncho-moniliasis should be arrived at by using great caution, because:

First, monilia fungi are frequently very abundant in the air of tropical countries, and very quickly contaminate samples of sputa that by any chance have been exposed to the air, even for a few seconds.

Secondly, these fungi, especially in the Tropics, are not rare in the mouth, in the saliva, and therefore a patient should be made to gargle and rinse his mouth with sterile salt solution before he is asked to cough and expectorate.

Thirdly, even if the fungus be present in the mucus originating from the bronchi, there are apparently certain cases in which the fungus is not pathogenic, being merely a saprophytic organism.

A definite diagnosis of primary Broncho-moniliasis, therefore, should be arrived at with great caution, when the bronchial expectoration collected with every precaution and examined at once contains a monilia,

tubercle bacilli being absent, and the amount of the fungus present decreases rapidly with the gradual improvement of the condition. Pathogenic monilias mostly belong to the following groups: krusei, metalondinensis, Pinoyi, tropicalis. The monilia, as I have already stated, not only must be virulent to the rabbit by intravenous inoculation, but the intrapulmonary injections of it must induce in the rabbit lungs a nodular condition which later becomes caseous.

Mixed Infections.—Cases of apparently true mixed infection, as for instance, Broncho-moniliasis and Broncho-spirochaetosis have been put on record by several observers.

Prognosis.—The prognosis of true primary Broncho-moniliasis must be reserved, as at times no treatment is of any avail, and the patient goes from bad to worse and finally dies.

Treatment.—Potassium iodide is useful in certain cases, but not in all. It is advisable to associate with it the administration of balsamics (principally creosote) and glycero-phosphates. Monilia vaccines are useful in only a few cases.

TEA-TASTER'S COUGH.

In connection with Broncho-moniliasis, I might say a few words on the so-called "tea-taster's cough" and "tea-factory cough." In 1906 a young assistant in one of the big Ceylon firms, a tea-taster, came to consult me about a chronic cough, which he said had not yielded to ordinary treatment, and had been suspected by several medical men to be of tuberculous origin. He emphatically stated, however, that he did not believe it was tuberculosis. "I am merely suffering," he said, from "tea-taster's cough," an expression I had never heard before. The general condition of the patient was good, and the physical examination of the chest revealed only a few coarse rales. The microscopical examination of the sputum was negative for T. B.; instead, I noticed microscopically some mycelial filaments and some yeast-like bodies. I inoculated several glucose-agar tubes, and I grew a monilia fungus which, at the time, I believed to be an endomyces.

How did this patient get infected? Tea-tasters, in order to judge of the quality of the various teas, not only taste infusions, but often fill their hands with the tea-leaves

TABLE SHOWING BIOCHEMICAL CHARACTERS OF COMMON MONILIAS

	Glucose	Lævulose	Maltose	Galatose	Saccharose	Lactose	Mannite	Dulcite	Dextrin	Raffinose	Arabinose	Adonite	Inulin	Sorbite	Starch	Glycerine	Inosite	Salicine	Amygdalin	Isodulcite	Erythrite	Gelatine	Serum	Litmus Milk	Colour of Growth on
Monilia Zeylanica Castellani	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	Yello
M. balcanica Castellani	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	Whit
M. parabalcanica Castellani	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	"
M. krusei Castellani	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	"
M. parakerusei Castellani	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	"
M. pinoyi Castellani	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	"
M. nabarroi Castellani	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	"
M. metalondinensis Castellani	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	"
M. alba Castellani	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	"
M. albicans Robin	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+	+S	C	"
M. tropicalis Castellani	G	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	"
M. metatropicalis Castellani	G	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	"
M. rhoi Castellani	G	G	O	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	"
M. guiller mondi Castellani	G	G	O	O	G	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	"
M. macedoniensis Castellani	G	G	O	G	G	O	O	O	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	C	"
M. macedoniensoides Castellani	G	G	O	G	G	O	O	O	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	O	"
M. parachalmersi Castellani	G	G	O	G	G	O	O	O	O	O	O	O	G	O	O	O	O	O	O	O	O	+	O	C	"

G—Gas. O—Absence of gas or coagulation. C—Presence of clot. +—Positive. S—Slight.

and bury their noses in them, sniffing them up; in this way a certain amount of tea-dust enters the nasal cavities.

Now, if one examines tea-dust, in Ceylon, one finds that it contains fungi of the genus Monilia constantly, of the genera Aspergillus and Penicillium frequently, and of the genus Oidium occasionally. A peculiar streptococcus is also very often present. The same organisms are not rarely found in the nasal cavities of tea-tasters, and when bronchial symptoms appear in them, monilia-like fungi are present in the expectoration. It is probable, therefore, that the so-called tea-taster's cough is a Moniliasis, especially as a guinea-pig, in the nostrils of which I insufflated tea-dust regularly, died with symptoms of chronic broncho-pneumonia.

What I have said about "tea-taster's cough" applies to a great extent to the so-called tea-factory cough. For many years planters have noted, in Ceylon, that the coolies doing work in tea-factories, where the leaves are dried and there is a large amount of tea-dust floating about, after some months become weak, lose flesh, and often have a cough with muco-purulent expectoration. The planters have found by experience that these coolies must be taken away from the factory and sent to work in the field, and then the symptoms slowly disappear. I have examined some of these coolies, and their expectoration practically always contains fungi of the genus Monilia. I have little doubt, therefore, that the so-called "tea-factory cough" is a Broncho-mycosis, and probably a Broncho-moniliasis.

BRONCHO-OIDIOSIS.

This is clinically identical to Broncho-moniliasis and, as in the case with Broncho-moniliasis, a primary and a secondary form should be distinguished. The fungi belong to the genus Oidium sensu Pinoy and are characterized by abundant mycelium with numerous arthrospores but, in contrast to Monilia, free yeast-like budding cells are absent or rare. They may produce acidity in various sugars and other carbohydrates, but never gas. This genus (sensu Pinoy) contains 4 principal species:

O. lactis Link, 1809.

O. rotundatum Castellani, 1911.

O. aseroides Casellani, 1914.

O. matalense Castellani, 1915.

They may be differentiated as follows:

1. Surface of the culture smooth or only very slightly crinkled, produces acidity in glucose, though not constantly, but in no other carbohydrates. O. lactis.

2. Surface with duvet, produces no acidity or only very slight in the usual carbohydrates. O. matalense.

3. Surface vermiform, acidity in glucose, levulose, galactose, maltose and lactose. O. rotundatum.

4. Colonies with peculiar radiating appearance. O. asteroides.

The reader interested in mycology may find further details regarding these fungi in Castellani and Chalmers' "Manual of Tropical Medicine," 3rd edition, page 1093.

BRONCHO-CRYPTOCOCCOSIS.

Symptoms identical with those found in Broncho-moniliasis, but the causative fungi found belong to the genus Cryptococcus. These fungi consist of numerous yeast-like, budding cells with no mycelium; cultures never present asci,—this is the only characteristic that differentiates them from true Saccharomyces. There are a primary and a secondary type of Broncho-cryptococcosis. The treatment is the same as for Broncho-moniliasis.

BRONCHO-ENDOMYCOSIS.

This is caused by fungi morphologically identical with Monilia, but old cultures show presence of asci. It is a rare condition. The symptoms and the treatment are the same as for Broncho-monoliasis.

BRONCHO-SACCHAROMYCETOSIS.

This condition is caused by fungi of the genus Saccharomyces and other genera of the family of Saccharomyceteae. These fungi are characterized from a practical point of view by the following features:

1. Reproduction of budding.
2. Absence of mycelium.
3. Presence of asci in old cultures.
4. Gas fermentations of one or more sugars.

Symptomatology and treatment as in Broncho-moniliasis.

BRONCHO-WILLIASIS.

This is a very rare type of Broncho-mycosis. The fungi found belong to the genus Willia. They are characterized by the peculiarly shaped ascopores, bowler-hat-like, etc. I have had one such case. The patient, a retired planter, got well on potassium iodide. The symptoms were the same as those found in chronic Broncho-moniliasis.

BRONCHO-HEMISPOROSIS.

This condition, first described in 1910 by me, in Ceylon, is due to fungi of the genus Hemispora Vuillemin, which are characterized by the conidiophores terminating in an ampulliform structure with formation of Protoconidia and Denuteroconidia. The species which have so far been isolated in urose are two, one identical to H. rugosa Castellani, previously found in the Tropics, and the other probably a new species or at least variey: Hemispora pararugosa Castellani, Douglas and Thompson. The principal characters of these two fungi are, briefly, the following:

Hemispora rugosa Castellani, 1910 (Syn. Monilia rugosa Castellani, 1910) is a hyphomycete with the botanical characters of the genus Hemispora; is gram-positive but not acid-fast; the growth on glucose agar is abundant with a crinkled surface, occasionally ceribriform, and amber-yellow or brownish color. No gas is produced in any sugar, but a little acidity may be present in glucose, levulose, saccharose, and maltose. The fungus usually has no action on milk, but occasionally it induces a slight degree of peptonization with a small coagulum at the bottom of the tube. Gelatine is very slowly liquefied. This fungus was first found by me in cases of bronchitis and tonsillitis, in Ceylon, and lattr by Pijper in certain cases of thrush. I at first placed the fungus temporarily in the genus Monilia, later removing it, at the suggestion of Professor Pinoy, to the genus Hemispora.

Hemispora pararugosa Castellani, Douglas and Thompson, 1921, is morphologically and culturally very similar to H. rugosa. It is gram-positive, but not acid-fast. It does not produce gas or acid in the usual sugars and carbohydrates, but at times produces acidity in starch. It does not liquify gelatine, and there is no production of acid or clot in milk.

Symptomatology.—A mild and a severe type of the affection can be distinguished. In the mild type the general condition of the patient is good, there is no fever, and he simply complains of cough. The expectoration is muco-purulent, and does not contain blood. The physical examination of the chest is negative, or only reveals a few coarse rales.

The severe type closely resembles Phthisis; the patient becomes emaciated, there is hectic fever, and the expectoration may be bloody. The physical examination may reveal patches of dullness, fine crepitation and pleural rubbing. It is interesting to note that the affection occasionally develops after a tonsillitis caused by the same fungi, and characterized by the presence of yellowish or greyish patches.

Treatment.—Potassium iodide in large doses generally answers well.

BRONCHO-ANAEROMYCOSIS.

This mycosis has been investigated by Douglas, Thompson and myself. We have given, temporarily, the generic name

Anaeromyces to a group of bacillary fungi of the order Micro-siphonales Vuillemin, 1912, which are found in certain cases of bronchitis, and which show transition and intermediate characters between the genus Corynebacterium Lehmann and Neumann, 1896, the genus Mycobacterium Lehmann and Neumann, 1896, and the genus Nocardia Toni and Trevisan, 1889 (cohnistreptothrix Pinoy 1911, pro-parte), of the family Nocardiaceae Castellani and Chalmers 1918 (Actinomycetes Lachner-Sandoval, Trichomycetes Petrusky).

The organisms of this group, Anaeromyces, are very closely related to the genus Corynebacterium Lehmann and Neumann Diphtheria and diphtheroid bacilli) and the genus Nocardia Toni and Trevisan (Actinomyces Harz, Discomyces Rivolta, Streptothrix Rossi-Doria, Oospora Sauvageau and Radias, Cohnistrepthrix Pinoy, pro-parte), but, in contrast to the former, branching is much more marked, and they are strictly anaerobic; and, in contrast to the latter, the mycelium is very much less developed, the growth is moist and not dry and crinkled, and they never give rise to actinomitic granules in the lesions. They are gram-positive, non-motile, and not acid-fast. These germs or similar cones, were found in cases of bronchitis in 1904 by Chalmers and myself, and were referred to in a short paper read at the time as "Bronchial anaerobic Diphtheroid Bacilli," but the observation attracted very little notice. They are also somewhat similar to Bacillus Vitulorum Flugge.

Anaeromyces bronchitica Castellani, Douglas and Thompson — Morphological and Staining Characteristics.—The organism is bacillus-like and resembles in its shape a diphtheroid bacillus, but branching is much more marked. It is gram-positive and not acid-fast. It measures 3 to 5 microns in length, and 0.3 microns in breadth.

Motility.—The organism is non-motile.

Relation to Oxygen.—The organism is an obligate anaerobe.

Cultural characters.—Provided a strictly anaerobic technic be used, the germ grows well in many of the usual laboratory media. The growth on glucose agar and other media is not very characteristic. The fungus does not seem to grow in gelatine at 22 degrees C.

Biochemical reactions.—There is no formation of acidity or gas in any carbohydrate we have experimented with, viz., glucose, levulose, maltose, galactose, saccharose, lactose, and inulin.

Animal experiments.—The action of this organism in the lower animal has not been fully investigated, but it does not seem to be pathogenic to guinea pigs, rabbits or mice.

Pathological Conditions in Man in which Anaeromyces bronchitica has been found.—The fungus has been isolated from a fairly large number of cases of bronchitis which may be classified into two groups:

The haemorrhagic type.

The muco-purulent type.

Cases of haemorrhagic type closely resemble pulmonary tuberculosis; there may be intermittent or remittent fever; the patient may become anaemic and lose flesh; the expectoration contains blood and is at times of very characteristic bright brick-red color. The physical examination of the chest may be at times almost completely negative; at other times it may show signs, such as patches of dullness and crepitations, pointing to tuberculosis.

The symptoms noted in muco-purulent type do not differ from those of an ordinary case of subacute or chronic bronchitis. The sputum is muco-purulent, or at times purulent; there may be slight fever, but the general condition of the patient is not affected for a long time. In some cases the muco-purulent type, after a variable period of time, turns into the haemorrhagic type.

Geographical distribution. — The organism has been found in cases which con-

tracted the disease in Ceylon, in the Federated Malay States, Serbia, Italy, France, and England.

Mixed Infections.—The organism has been grown occasionally from bronchial cases in which Monilia and other fungi, and also the tubercle bacillus, were present.

Pathogenicity of Anaeromyces.—The animal experiments carried out by Douglas do not seem to show that the germ causes any very serious lesion in guinea-pigs, rabbits, or mice, and this is, of course, an argument against the organism's being pathogenic. On the other hand, the following facts are in favor of its pathogenicity to man: (1) The anaeromyces present in the sputum rapidly decrease in amount, and finally disappear with the gradual improvement of the bronchial condition; and (2) in a number of cases the haemorrhagic expectorations very rapidly ceases and all the symptoms quickly disappear, when an anaeromyces vaccine is used without any other treatment. It is therefore probable that anaeromyces has at least some part in the aetiology of certain cases of hemorrhagic bronchitis.

BRONCHIAL-ASPERGILLIOSIS.

This affection, known also as bronchoaspergillomycosis, pseudo-tuberculosis, aspergillus pneumomycosis, and in France maladie des gaveurs des pigeons (pigeon-breeders)), is caused by fungi of the genus Aspergillus Micheli and Sterigmatocystis Cramer. These fungi are easily recognized by their very characteristic fructifications: the conidiophore terminates into an ovoid or roundish formation, from which take origin numerous elongated claveiform elements, each of which supports a chain of roundish conidia. These fungi are generally saprophytes, but occasionally become true parasites. They grow quite easily in both acid and alkaline media. It is interesting to note that iron and manganese have a favorable influence on their growth and sporulation. When growing parasitically in the tissues of man and animals, they often lose some of their characters and the typical fructifications are often absent, only mycelial segments and yeast-like cells being seen.

The classification of Aspergillus is difficult. In practice the principal types may be different as follows:

1.—Conidia, of very large size (9 to 15 microns in diameter), yellow, or reddish-yellow, or gold-brown. *A. herbarorum* Wiggers.

2.—Similar to herbarorum in general characteristics, yellow or yellow-green, but conidia somewhat smaller though still large (7 to 8 microns). A. repens De Bary.

3.—Similar to above two, as regards color and being yellow or greenish-yellow, but spores smaller (5 to 7 microns in diameter) and with a granular surface. *A. flavus* De Bary.

4.—On solid media, brownish-black if the medium is alkaline or neutral, greenish if the medium is acid; conidia small (2 to 3 microns) and smooth. *A. fumigatus Fresenius* 1775.

Symptomatology.—There are signs of muco-purulent bronchitis. In severe cases haemoptysis may occur and there may be serotine fever. The disease often terminates fatally, and at the post-mortem numerous mycotic nodules may be found in the lungs and occasionally in the liver and kidneys and other organs. Care should be taken to distinguish secondary Aspergillosis from primary Aspergillosis. Secondary Aspergillosis occasionally develops into tuberculosis, and not very rarely in gangrene of the lungs.

Diagnosis.—This is based on the mycological investigation of the sputum. It is important to note that, as a rule, in the sputum only conidia; elements and mycelial elements are seen microscopically.

Treatment.—This is difficult. Potassium iodide is useful in incipient cases, and a change of climate and occupation should be recommended.

BRONCHO-PENICILLIOSIS.

The condition is clinically identical to Broncho-aspergilliosis, but the causative fungi belong to the genus Penicillium Link. Fungi of this genus are characterized by their fructifications, the whole fruit-bearing hyphia with its sterigmata and conidia resembling a hair-pencil (Penicillium-Hair pencil). The species most frequently found in man is P. crustaceum Linnacus (synonyms P. glauccum Linnacus, Monilia digitata Persoon). It is often found living saprophytically on bread, cheese, and fruits. The conidia are spherical, smooth, of a maximum diameter of 4 microns.

In Macedonia, during the World War, a Serbian soldier was sent to the hospital to which I was attached, with the diagnosis of pulmonary tuberculosis. He had been wasting for two months, and had serotine fever. Expectoration muco-purulent, at times bloody. Repeated examination for T. B. negative. A few mycelial threads present. A fungus was grown with the characters of a Penicillium, probably P. crustatum. Potassium iodide in full doses acted well.

BRONCHO-MUCORMYCOSIS.

This term is used to designate bronchial and bronchial-alveolar affections associated with fungi of the genus mucor Micheli, 1729, and the following genera:

Lichtheina Vuillemin, 1904.

Rhizomucor Lucet and Constantin.

Rhizopus, Ehrenberg.

These genera belong to the family Mucoraccae, the members of which are characterized principally by the following features: aerial hyphae are present (gomidiophores) each of which supports on its distal extremity a pear-shaped globular or claviform formation, the sporangium or gonidiangium which is at first separated from the gonidiophore by a septum. The septum later protrudes into the lower part of the sporangium to form a variously-shaped structure called columella.

Inside the sporangium, gonidia (Endospores) develop by free cell formation. Part of the sporangial protoplasm not used in the formation of the endospores becomes transformed into a peculiar mucilaginous substance, which, at a later period, becoming swollen by absorption of water causes the bursting of the sporangium. Each endospore or gonidium which has become free in this way gives rise to a mycelial tube by germination. The mycelial tubes ramify, and an abundant mycelium is produced.

In some species a form of partial sexual reproduction takes place by a process of zygosporosis, or conjugation of two gametes which morphologically are not of different shape or structure,—that is to say, they are not sexually differentiated. It must be noted that many species, when growing in unfavorable media, reproduce only by conidia. They require plenty of oxygen, and therefore the media tubes must never be closed with rubber caps; otherwise they lose their characteristics and grow monilia-like or yeast-like. The family Mucorraceae may, from a practical point of view, be classified as follows:

1.—Mycelium ramified, no rhyzoids (root-like hairs by which the plant is attached to the medium). *Mucor*, Micheli, 1729.

2.—Mycelium, non-ramified, with or without rhyzoids, sporangium terminates in a special formation, encircling the base of the columella. *Lichtheima*, Vuillemin, 1904.

3.—Mycelium provided with rhyzoids columella ovoid. *Rhyzomucor*, Lucet, Constantin, 1900.

4.—Mycelium provided with rhyzoids columella, hemispheric, mushroom-like. *Rhizopus* Enrenberg, 1820.

For further particulars on the botanical classification of these fungi, the readers

may consult Castellani and Chalmers' "Manual of Tropical Medicine," 3rd edition, pages 972-977.

Illustrative case. — During the World War, while I was in the Balkans, in 1917, a Serbian soldier was sent to be with the diagnosis of pulmonary tuberculosis. He was losing flesh rapidly and felt very weak. Slight fever at night, a fair amount of expectoration, generally muco-purulent. The physical examination of the chest revealed nothing except a few coarse rales. Microscopial examination of the sputum for T. B. constantly negative; instead, a few segments of mycelium were noticed on several occasions, glucose-agar tubes and other media were inoculated, and a fungus was isolated which at first showed the characters of a monilia; in sub-cultures, however, the characteristic features of a mucor appeared with presence of the globular sporangia (columella) 5 microns in diameter of yellowish color, spores elliptical smooth. In what way did this man get infected? He was in charge of horses and often had to remove the horse dung, and as is well known horse dung almost always contains mucor.

BRONCHO-ACREMONIELLASIS.

In a case at first considered to be a Broncho-aspergillosis Perin isolated a fungus which was investigated by Pollacci. In glucose-agar it produces a growth which is at first whitish, but later soon becomes black. The microscopial examination of the cultures shows abundant septate mycelium, the hyphae being 3.5-4 microns in breadth. Each condiosphore bears a terminal round spore 7.7 to 9.7 u. in diameter, of a dark-brown color. Pollacci considers the fungus to belong to the genus Acremoniella and has called it Acremoniella Perini. Broncho-acremoniellasis clinically is identical with Broncho-aspergillosis.

BRONCHO-CLADOSPORIOSIS.

From a case of chronic bronchitis with occasionally haemorrhagic sputum I have isolated a fungus very similar to Chlorosporium Mansoni Castellani which is the cause of Tinea nigra. Potassium iodide answered well.

BRONCHO-ACOLADIOSIS.

From two cases of chronic haemorrhagic bronchitis I have isolated a fungus which does not seem to differ in any important point from Acladium Castellani Pinoy, which is the cause of a peculiar ulcerative condition of the skin. The two cases got well on potassium iodide.

BRONCHO-SPOROTHRICOSIS.

In cases of dermal sporothricosis the fungus may occasionally attack the bronchi and the pulmonary tissues. But there is also, though it is rare, a primary Broncho-sporothricosis. The patient has the symptoms of severe bronchitis or broncho-pneumonia, with mucu-purulent expectoration, occasionally tinged with blood. The diagnosis is based on the microscopical and cultural examination of the sputum. The microscopical examination will show presence of yeast-like bodies in certain cases, in others it will be completely negative. The sputum should be inoculated into several tubes of maltose-agar, and left at a temperature of the room for several days. In positive cases whitish colonies generally appear, which soon coalesce, forming a whitish rerebiform mass and this later on becomes black or brownish. For the determination of species, hanging-drop cultures must be prepared, and also cultures on various media, etc. The classification is based principally on the size and shape of the conidia, and may be found in the chapters on fungi in Castellani and Chalmers' "Manual of Tropical Medicine."

The prognosis is quite favorable, provided a correct diagnosis is made at an early stages. Potassium iodide in large doses is a specific.

BRONCHO-MYCOSES DUE TO UNCLASSIFIED FUNGI.

In Ceylon and the Balkans, and recently in England, I have come across cases of

haemorrhagic bronchitis from which I isolated some peculiar fungi that have not yet been classified. Potassium iodide answered well in most of them.

CONCLUSION.

In conclusion, it would seem to me that the subject of haemorrhagic bronchitis of protozoal, helmenthic and fungal origin deserves to attract more attention than has been the case hitherto. It should be remembered that the subject is of practical importance; all these conditions I have mentioned are generally mistaken for tuberculosis, but, while pulmonary tuberculosis in the haemorrhagic stage is often incurable, most of the conditions I have described, provided the correct diagnosis is made, in time, are amenable to treatment.

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Kline & Blankenhorn, twenty-four cases. Observed at Mount Sinai Hospital, Cleveland, sixteen cases.

DISCUSSION.

Dr. F. M. Johns: Mr. Chairman and Gentlemen: Dr. Castellani has given me the honor of opening the discussion but it is absolutely impossible for the student to discuss the work of the master and I prefer not to enter into that detail at all. Suffice it to say that it is not sufficient merely to diagnose our patients, for the present at least, as merely having an inflammatory condition of the lungs and bronchial tubes. These findings demand an explanation and it is just as important, in my opinion, at present, to determine exactly the cause of inflammatory condition of the lungs as it is to diagnose the particular type of organism in meningitis, urethritis and all other acute, infectious diseases. The treatment depends upon the type of infection in many instances—and the prognosis to a still greater extent, and I am sure that the time will soon come where none of us will be satisfied to examine the sputum and say, "No tubercle bacilli present." (Applause.)

Dr. Urban Maes (New Orleans): Since Dr. Castellani has been good enough to mention my name as one of those investigating the condition, I want to say that I think it will be only a matter of a very short time when this condition will be universally recognized as "Castellani's disease." I had the good fortune to see a patient not long ago, through the courtesy of Dr. Eshleman, who had had a cough with bloody expectoration for twenty odd years. The radiologist had taken a picture and concluded that she had an empyema. On running down the history we found a history of a chronic bronchitis and suddenly an acute illness. The patient was in desperate condition and I at first declined to operate but was persuaded by her doctor husband that we had better take a chance. I took a smear of some of the pus. Through the investigation of Dr. Lanford, the pathologist at the infirmary, we found this pus swarming with spirochaetes, and strange to say after drainage, in a few days the patient reacted slightly and was in condition to take a few doses of salvarsan. She has now gotten well up to a certain point when some of the supplementary treatment mentioned by Dr. Castellani will have to be given.

I think that there are several very important things that will be brought out. The pulmonary hemorrhage must be accounted for and cannot always be accounted for by pulmonary tuberculosis. I ran down the literature of this subject that was available at the library of the Orleans Parish Medical Society and I could trace sixty-four reported cases up to that time, mine being the sixty-fifth. Sixteen of these came from the work of some American investigators, Kline, Berger and Blankenhorn from Cleveland. The lesson to be drawn from this is that out of sixty-five reported cases, sixteen came from the work of two men in one institution, which I think rather points out that we have been satisfied in the past with negative sputum examinations for the tubercular bacillus and not running the matter down far enough so as to really identify the spirochaete.

I think we are indebted to Dr. Castellani for calling our attention to the disease. We are indebted to Kline, Berger and Blankenhorn of Cleveland for showing us the comparative prevalence of bronchial spirochetosis, and that we have been overlooking the minute sputum examinations and the *repeated sputum examinations* that are necessary to identify a disease which, when it is identified, is curable in most instances and in the past has been regarded as a fatal and hopeless malady. (Applause.)

Dr. J. E. Knighton (Shreveport, La.): An interesting feature is the fact that the organisms are found most numerous in the hemorrhagic portions of the sputum. As is well known, this is not true in cases of hemorrhage from tubercular lesions. The tubercular bacilli are rarely found in the blood from a hemorrhage of a tuberculous patient.

The question that suggests itself to me, is whether or not the infection by this organism is local or a blood stream infection. I would like to ask Dr. Castellani to answer this question in his closing remarks.

Dr. Wallace J. Durel (New Orleans): Dr. Maes' report of a case of spirochaetal empyema prompts me to call attention to a case which I hope Dr. Castellani will elucidate from his viewpoint of blastomycosis of different areas of the skin including the large patches on his nose, pus, an empyema accumulation which contained numerous blastomyces. This case was treated for the condition generally and in addition to that his chest was aspirated and an equal amount of air injected back into the chest so as to empty the pleural cavity without causing any discomfort to the patient. This, by the way, is a subject which I may have occasion to bring up before the Society later as a general treatment of empyema, but in this case, this man got along so well that finally he got out of touch with the doctors in the clinic and we haven't seen him for some time.

The point is this, that when you get an empyema it is very important that you make a smear and a culture of your pus because it may lead you to find a general condition for which a patient must be treated before you can cure that case.

Dr. C. L. Eshleman (New Orleans): Dr. Castellani mentioned four (4) types of pulmonary streptothricosis; mucohaemorrhagic, bronchitic, putrid and asthmatic. My case, referred to by Dr. Maes and operated by him, was a lung abscess. She had the physical signs as well as the history of a lung abscess, namely, septic fever and sweats and cough with purulent sputum in enormous amounts with much blood; also a high leucocyte count and radiological evidence of an abscess. It was emptying into a bronchus and had also broken into the pleural cavity giving the suggestion of an empyema. I suppose the putrid type referred to by Dr. Castellani fits this case, but I think we should recognize the fact that this condition occurs not infrequently as a lung abscess, and in all lung abscesses the sputum should be examined for the streptothrix. Ordinary pyogenic abscesses are simply drained, but when the streptothrix is present the treatment should be salvarsan injections in addition to drainage.

In my case the lung involvement was very extensive, and the drainage tube was introduced about six inches into the lung. This was followed by improvement but her real improvement seemed to begin with the salvarsan injections which followed.

Dr. Castellani (In closing): The principal points which have been brought forward in the discussions are the following: Importance of the examination of the sputum not only for the tubercle bacillus but for other organisms which may be causative of bronchitis and bronchopneumonia and other conditions of the lung; second, another point has been brought forward of great importance in my opinion, and that is that X-ray examination in cases of broncho-spirochaetosis gives very little or no help; thirdly, the suggestion has been made that broncho-spirochaetosis may be a blood infection. I say again that the condition has not been as yet completely investigated. My impression is that there are several types of broncho-spirochaetosis. While there is a type we have little doubt takes origin at first from the upper bronchi and probably from the pharynx, possibly from the mouth, there may be another type which may be blood infection. After all, you must remember the case of syphilis—you have a syphilitic condition of the lung which is clinically identical with broncho-spirochaetosis, and in that condition the infection is a blood infection.

I might mention that I did not quote all the various types of broncho-spirochaetosis which have been described. There is a type to which I should like to call attention, and that is a broncho-spirochaetosis which develops after an acute condition which can hardly be differentiated from a ordinary cold. In the mucus of the pharynx and sometimes in the mucus of the nose, you will find a very large number of spirochaetes but this spirochaeta is much smaller than spirochaeta bronchialis and spirochaeta buccalis. It is a very, very minute spirochaeta, so minute that I call it "spirochaeta minuta." (Applause.)

INSANITY RESPONSIBILITY.*

J. A. O'HARA, M. D.,

NEW ORLEANS.

Philanthropic men and women, and their government, representing all parts of the world, are munificently and liberally donating their money, while scientific men are pushing forward, using all their energy, brain and brawn, during daylight, and many hours of the darkness, seeking methods and means where the human life

*Read before the Louisiana State Medical Society, Monroe, April 15-17, 1926.

may be made comfortable and bettered, by controlling or conquering the diseases that may prolong our lives, and make us a better race.

Money, energy, time and other methods are being brought into play, sacrifices of all kinds are used, to try to reach the goal, in many instances with colossal and profound success and reward, and in many instances opening up avenues for future encouragement; but, unfortunately, the very roots that should be upturned and destroyed, are being sadly neglected, and are given but a passing glance.

Humanity is a splendid subject for the ravages of disease, that are both contagious and infectious, that leave behind them long trials of pathology, but, fortunately, they are combatable, suppressable, and can be crushed out, as has so often been demonstrated, by proper application of sanitation and hygiene methods energetically applied. This has been clearly proven when our communities are visited by epidemic or endemic diseases; therefore, from this angle the present and future human race, at least, is protected and safeguarded.

But insanity, and its sequel, diseases which mankind acquires, and acquires from known and unknown sources, inherited and handed down to him through generations, characterized by its chronicity, viciousness and seriousness and sorrows, by its serious pathology, and finally the written and unwritten crimes that insanity is responsible for; crimes that have dethroned governments, torn families asunder, not forgetting the stupendous cost or expense to the community and government, all of this daily occurring amongst us and practically nothing being done to suppress, control or protect us. I say nothing, because, as a mere handful of men, fighting courageously against desperate odds, handicapped on one side by man himself, and on the other by the powers of the government, and nothing but the stinging criticism of the press.

Have you ever heard of an individual donating a legacy to be used for building any institution for the treatment, care or prevention of insanity, or have you ever heard of a member of any administration advocating a bill that would, in any manner, help these unfortunates? When such a thing is approached, they seem lost in a maze of wilderness.

Do we, or do they, mean, by their indifference, to infer or insinuate, that the future race of man does not wholly depend upon the physical and mental make-up of the present generation? What is it that has occurred in the past, that has not been the result of evolution or creation from the "workshop" of the "brain of man"? Therefore, disease, infectious or contagious, can be cured, or controlled, and upon neither does the future depend for its development.

Past history and investigation shows that feeblemindedness is transmitted most by inheritance, by faulty germ plasm to the child, from one or both parents; but it is also proven that a large percentage is also the result of injury, etc., to the child in utero, or from continued pressure, etc., during birth, for birth injuries are more frequent than at first suspected, infectious diseases are known to cause arrested mental development in the early months of child life, causing mental defectiveness as actual as that of the inherited forms. A splendid paper read at the Southern Medical Convention, giving results of one hundred spinal punctures made in the first few weeks of the new born, nine positive blood findings in the C. S. F. out of the hundred cases showing nine cases of cerebral hemorrhage, the existence of which would not have been observed until later in life.

Dr. Fermal's late survey of the State of Massachusetts, amongst its 3,500,000 inhabitants, there were found 60,000 people who were intellectually subnormal. An estimate that of the 24,000,000 persons attending the schools in this country, that about 4 per cent., or, in round figures, 960,-

000 will enter some hospital for mental diseases at some period of their lives, if the present rate for the first admissions is maintained.

Alfred Adler, psycho-analyst, of Vienna, in speaking of neuroses, states that the central influence in neuroses "is the feeling of inferiority," and the origin of this attitude goes back to the early period of life, between three and five years of age, in which the developing "ego" first forms its scheme of the category, into which it will fit, and, by this early influence, this substrata of life is so firm, and lasting, that the individual derives but little benefit of his experience in his late life.

There is proof beyond dispute that the insanities of the races, with their deterioration, frightful and unerring acts of behaviorism, and its great stages of chroniciy, must not be overlooked, but rigorously attacked in the early mental life, unless we are satisfied to go on, and on, with the conflicts that are daily occurring between insanity and law, and allowing hundreds of innocent victims to be murdered or ravaged by the group of existing feebleminded and epileptics, that apparently go to make up the greater class of criminals of the anti-social type, from which society should be protected; but I am sorry to add, that from time immemorial, it has been allowed to exist without any concrete action being taken to obstruct it.

If those that should assist could be made to open their eyes to see, and their ears to hear, and their minds properly to function, institutions could and would be established in Louisiana, where with treatment and proper guidance, these subjects could be at an early age gotten under control, for these cases should have, not only equal rights, but better rights of encouragement and education than the normal-minded child; they should be schooled and remain at home under proper instruction of their parents, who are always glad to try to help. For it is during his early school life that the child makes its first conscious and important adjustment to the human part of his environment, and many a direlict mind, many a voice from the wilderness, could be made to function, if not as a whole, at least partially, and be able to help and assist the body to maintain and guide itself.

Modern industry of the day is now using automatic machinery, which is now being operated by repeated and monotonous movements, which is now being operated by unskilled labor, and the uneducated classes, and it is here that many of the sub-normal cases could be advantageously employed, as it has been demonstrated again and again that the early trained sub-normal or mentally retarded are successful contenders to the uneducated classes.

As to the early training of the sub-normal, following the suggestion of Dr. Fermal and others, the most practical methods are:

Identification, by repeated mental examinations of the child of three or more years retarded;

Registration at a central bureau for ascertaining the size of the problem.

Education by special classes, and by Child Guidance Clinics.

Training—Domestic duties and simple trades.

Supervision by trained workers at home.

Segregation, "a fork in the road," which seems to divide the question, some justly claiming that a sterilized defective would be less liable, for, if left unprotected, their lack of control would still lead them on to crimes of arson, assault and murder and petty larceny, and drug addicts, vagrants or destitution.

A defective, sterilized woman, by this fact, and her incapacity of pregnancy, would be more prone to life of illicit intercourse, and life of prostitution, and

therefore an incubator for the propagation of venereal diseases, and vice.

Following in the wake of these suggestions, it becomes apparent that the control of insanity is by the creation of psychopathic clinics for child guidance, or child guidance clinics, in every town and hamlet in the State, under the control of the National Commission of Mental Hygiene, where those interested, the parents and guardians, could receive proper instruction in mental hygiene, with records and questions for the parents as to the behavior, etc., at home of the child, and at the same time to receive suggestions from the parents themselves; volunteers from the medical profession could be used as instructors in the clinic, and great assistance could be gotten from the movies and from the radio for broadcasting into every home in this State, and by this means gaining access to the very heart of the community.

When we look around us at the situation that confronts Louisiana, we find the East Louisiana Hospital at Jackson, and the Central Hospital at Pineville, and the Hospital for Mental Diseases at New Orleans, these three institutions all worthy of their names, under the control and supervision of the very best physicians and technicians of the country, but working under the strain of economy. Economy, we know, must and should be the watchword of all branches of an administration, but an economy that calls for "biting of the penny," or the bending of the dollar, is false economy that produces no dividend. Economy and protection of the community's health are both positively incompatible. The institutions of this State, from pit to dome, are crowded with insane; thousands are being housed in violation of the most positive rules and order of the American Hospital Association, and still, with this forced economy on the one hand, and superpopulation on the other, our superintendents are meeting the situation bravely, doing constructive work beyond our comprehension.

The time is now ripe, so let us medical men "heave to" and see those who can overthrow this unfortunate condition, see our representatives in the Legislatures, and ask them to assist the most deserving and righteous class of our unfortunate citizens, our insane, by establishing sufficient institutions for the care and treatment of the unfortunate insane in this State. As the control of insanity is more important than road bonds are, the bonded indebtedness of the State should be increased for this splendid purpose; the future generation will pick the golden apple and enjoy the benefits, and it is for this reason alone they should help to bear the burden.

THE ETIOLOGY OF PEPTIC ULCER.*

E. GARLAND WALLS, B. S.,

NEW ORLEANS.

Ever since the beginning of medical science, the great aim of the profession has been to determine the cause of disease. The etiology of many diseases has been very completely worked out, but there are still some of which we know relatively little. Of this latter group, an outstanding member is the so-called peptic ulcer. Just as the ancient physician-philosophers pondered over the question of the cause of disease so do we still wonder and speculate on the cause or causes of peptic ulcer. The purpose of this paper, therefore, is not to state *the* cause of this condition but to discuss in an elementary fashion and without the burden of too much statistical data, factors which are believed to play a part in the production of ulcer.

The importance of determining the cause of peptic ulcer is readily appreciated when one considers that this may be a preventable disease or a specific drug or serum may be discovered to cure it if we know

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the cause. It is to be remembered that we are not speaking of the ulcer of syphilitic origin or the tuberculous ulcer but the "simple" gastric or duodenal ulcer, which varies from a punched-out, localized destruction of mucous membrane to the ulcer surrounded by undermined edges with proliferation of connective tissue, thickened walls, and a base consisting largely of a thin layer of muscularis or somewhat thickened serosa depending on its chronicity. Smithies demonstrated that the time element has little or nothing to do with the type of ulcer, that is, a chronic ulcer may be produced in a few weeks and an acute ulcer may have existed for a much longer time.

The great British physiologist, Bayliss, in the "Introduction to General Physiology" (1919), says that "our task is to refer, as far as we can, all phenomena of life to the laws of physics and chemistry," and, truly, this is a good general rule to follow, that is to say, try to stick to the facts that are based on substantial evidence and avoid as much as possible the theories with little or no foundation. We will start, therefore, with a few facts as to the location and incidence of peptic ulcer.

Peptic ulcer occurs in the duodenum in about ten cases out of eleven, or about 91% of cases, and the remaining 9% occur in the stomach. This leaves out of consideration the jejunal ulcer which has come to be such a rarity with the advent of improved technique of gastroenterostomy and routine attention to foci of infection that the percentage is almost negligible. However, jejunal ulcers do occur sometimes after gastroenterostomy near the opening into the stomach. Duodenal ulcers occur most frequently in the "cap" or first portion, about 1.7 cm. from the pylorus, usually on the anterior surface, and closer to the upper than the lower border (Judd). It is rare to find ulcers in the lower portion of the duodenum. Gastric ulcers are usually found on the lesser curvature and on the posterior aspect of the stomach. The vessels supplying these parts are end-vessels which may invite thrombosis and interfere with ordinary healing processes, there being little collateral circulation. The occurrence of multiple ulcers is common and sometimes both stomach and duodenum are involved. Sippy says that ulcer must occur in the "neutralizing zone."

The incidence of this disease is not of great importance but must be given for reasons that will be obvious below.

Sex statistics vary so greatly that one cannot put much faith in them. Post mortem statistics show a greater incidence in females while surgeons show an enormous preponderance of males. It is generally taught that ulcer is more common in women and especially those of nervous temperment.

The age at which ulcers are prone to occur is of greater importance. It is rarely a disease of infancy or childhood but more common after the twenty-fifth year. It occurs in females younger than in males, as a rule. In spite of what has been said, it should always be remembered that no age is exempt from the possibility of ulcer formation.

Geographic distribution and sociological conditions bear a relationship to each other, so they will be mentioned together. Few statistics are available but it is generally believed that the people that enjoy the refinements and worries of civilized life are more likely to have ulcer than are the simple, primitive people. This belief is probably not due so much to a smaller incidence in these people as to the failure to diagnose the condition. Europeans are more prone to have peptic ulcer than are Canadians and residents of the United States. (C. P. Howard.)

With these more or less uninteresting remarks as to incidence disposed of, we will proceed to discuss the various theories

of peptic ulcer formation and weigh their merits.

First to be considered, is a theory that is rather generally accepted now and, I believe, in the near future will be on such a firm foundation that it will no longer be a theory but a recognized fact; this theory is that peptic ulcer is due to infection. Rosenow even goes so far as to say that ulcer is due to a specific streptococcus that has a predilection for the gastric or duodenal mucous membranes. He bases his belief on the actual production of ulcer in dogs by the intravenous injection of micro-organisms cultured from foci of infection of patients suffering with peptic ulcer. The same strain of streptococcus was recovered from the ulcer so produced. This seemingly proves that ulcer can occur in this way but it has been noted that ulcers produced under these experimental conditions tend to heal more readily than the peptic ulcer of man, so there must be factors other than infection to account for slow healing. In further evidence of infection as a cause for peptic ulcer formation, we know of the very common occurrence of foci of infection in teeth, tonsils, appendix, gall bladder, sinuses, etc., in peptic ulcer patients. This occurs so frequently, especially appendicitis and cholecystitis, that Deaver and others do a routine appendectomy whenever surgical measures are used on a case of peptic ulcer, and any evidence of gall bladder disease warrants a cholcystectomy. Improvement after these measures is very common. Another fact that strikes me is that the incidence of jejunal ulcer after gastroenterostomy has been reduced almost to zero since the importance of removing foci infection has been brought out and they are removed routinely.

We have been referring to an infection of the gastric or duodenal mucous membrane by way of the blood stream. Other authorities, notably Ramond of Paris, believe that infection may take place from micro-organism injected through the digestive tract. They are supposed to lodge in the tubules or crypts of the mucous membrane and in the presence of a lowered resistance set up an infection. Closely allied with this idea is the belief that there is a relationship between peptic ulcer and chronic gastritis. This is certainly a possibility, for in this condition there may be a defective emptying and there is a partially devitalized mucous membrane with a deficient supply of mucus. However, against this view is the fact that there is usually a low free acidity in prolonged cases of chronic gastritis as contrasted with hyperacidity in ulcer.

Hurst (England) is of the opinion that some ulcers may be due to the action of blood borne toxins from foci of infection. He believes, however, that more cases are due to actual infection with micro-organisms giving rise to inflammation of the minute submucous lymphoid follicles which ultimately break down, open into the lumen of the stomach or duodenum, and form the base for a definite ulcer.

Next in importance to the theory of an infectious origin of peptic ulcer comes the idea that vascular blocking may be the cause. Absence of or decreased blood supply certainly bears an etiological relationship in some cases, but it is improbable that it would occur in all cases. Ulcer occurs with such frequency in patients suffering with chlorosis, anemias, arteriosclerosis, or Raynaud's disease (vascular spasm), that it cannot be considered a coincidence. In a series of five hundred and twenty-two cases, Sippy found that 26% had one or more of these affections. Embolic blocking or thrombosis will produce a similar diminution in the blood supply. It has even been suggested that there might be areas of circulatory inferiority due to developmental abnormalities in some cases. Vascular disturbances can at least be considered a predisposing cause of peptic ulcer.

The importance of the nervous system in the etiology has been emphasized by some authorities. Prolonged mental strain, shock and emotion may have some effect, as many ulcer patients are of the type that is inclined to worry. It may be an effect produced through the autonomic nervous system or somt one or more endocrine gland. Rogers explains this by the fact that emotional disturbances stimulate the sympathetic system and it becomes fatigued. The vagus action is then given full play with a consequent production of hyperacidity, hypermotility, or pylorospasm, which may be followed by ulceration if the condition is prolonged. He bases this on dog experimentation. Another conception of the nervous influence on peptic ulcer formation is that it is a local trophic disorder similar to herpes.

Whether irritants, either chemical or physical, may produce peptic ulcer or not, we do not know. Experimentally produced lesions, however, heal readily, so we are inclined to doubt that irritants or trauma can produce ulcer unless there be other etiological factors present. Chemicals, such as alcohol or poorly prepared alcoholic beverages, especially when taken on an empty stomach, and spicy foods taken in excess, may irritate the mucous membrane. The occurrence of ulcer in total abstainers and infants shows that this cannot be an essential factor. Over-eating and poor chewing of food may produce abrasions of the mucous membrane and cause some devitalization of tissue, so allowing autodigestion to take place. These factors also increase the peristalsis of the stomach, affording a possible explanation for the fact that most ulcers occur at the pyloric end (due to driving of the food toward the pylorus, causing trauma there).

Consideration of the role played by the hydrochloric acid of the stomach in the production of peptic ulcer has been reserved till now for the reason that it must be considered with reference to the etiological factors discussed already. It will be recalled that in almost every case of peptic ulcer there is an increase in the free hydrochloric acid of the stomach. The occasional case with achlorhydria, however, is enough to change its status from a factor of great importance to a contributing cause. Hyperchlorhydria can occur, too, without the production of ulceration. It has been definitely proven that normal, healthy tissue will not be digested by the gastric hydrochloric acid and digestive enzymes if it is properly nourished. Why it is that diseased or devitalized mucosa will be digested, we don't know, but some think that there is an antidigestive enzyme in the healthy tissue which is not produced when the tissue is diseased. We are not certain yet whether the hyperacidity causes ulceration or the ulcer gives rise to a secondary hyperacidity. It is believed that the hydrochloric acid does play a very important part as a contributing cause in the majority of cases. The location of ulcer only in parts exposed to the action of gastric juice (stomach, first portion of duodenum, and jejunum after gastroenterostomy) is highly suggestive of this. Another very strong point in favor of this factor of ulcer production is that treatment by gastroenterostomy, partial gastrectomy, or Sippy's alkaline diet method (which are really all mechanisms for decreasing the acidity of the juice bathing the ulcer) give relief in many cases. Hyperacidity, therefore, fits in very well with any of the theories of primary disease of the mucous membrane as a secondary cause of ulceration and later as a cause of delayed healing.

Closely related to hyperacidity is the matter of tonicity. Hurst believes that a hypertonic stomach empties its contents into the duodenum more rapidly so predisposed to duodenal ulcer, while the hypotonic stomach allows the gastric juice to remain in the stomach a longer time than normally and predisposes to gastric ulcer. Bell says that there is no evidence to confirm this belief.

Smoking tobacco has been mentioned as a possible factor in the production. This is based on the fact that nicotine stimulates the parasympathetic nerve endings of the stomach producing a hyperacidity.

Heredity and abdominal pressure of a prolonged nature are two factors that have been mentioned many times in the literature, but are with so little foundation that they will be dealt with lightly. The occurrence of ulcer in several members of the same family does happen, but it is probably merely coincidental. The abdominal pressure idea originated in a belief that shoemakers were commonly victims of peptic ulcer, and this was explained by the fact that members of this trade constantly exert pressure on their abdomens. The theory is discarded now.

CONCLUSIONS.

1. At the present time, we are unable to say that any one thing is the cause of peptic ulcer. It is more than a local disease of the mucous membrane and one must think always of the probability of some underlying cause in other parts of the body.

2. Infection stands out as the most probable cause of ulcer, whether other factors are present or not. This explains why the ulcer forms, then, with the irritation of the hydrochloric acid, we have a secondary cause for delayed healing.

3. Vascular disease or any of the other systemic causes mentioned may be predisposing factors by causing decreased resistance.

4. We are unable to conclude with our present knowledge that peptic ulcer cannot be produced by nervous, vascular, or endocrinal disturbances.

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DIAGNOSIS AND CARE OF THE FAILING HEART MUSCLE.*

ALLAN EUSTIS, M. D.,

NEW ORLEANS.

It is only a few weeks since we were all shocked by the sudden death of one of our colleagues, from acute dilatation of the heart, following a comparaively mild attack of influenza. A short time after this, the New Orleans papers announced the sudden death on the golf links of a prominent citizen from the same cause. Both had been advised against overtaxing themselves, but the advice had been unheeded. I have been informed that neither of these cases had had any demonstrable cardiac lesion prior to the attack of influenza, and the cause of death, was no doubt, in each

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instance, a failing heart muscle from degeneration of its fibres as the result of toxemia associated with influenza, and both deaths were probably preventable had they followed the advice of their physicians.

That heart disease is one of the most frequent causes of death in this country is generally accepted, but it is also recognized that organic valvular heart disease does not kill as a rule, until the heart muscle weakens, and that as long as so-called compensation holds up the patient is not invalided.

It is not the purpose of this paper to discuss organic valvular heart disease, but to consider only that type in which the musculature is primarily at fault, and the murmurs functional; that condition of the heart usually spoken of as "chronic myocarditis." There is rarely a true myocarditis or inflammation; and frequently, even no degeneration of the muscles can be found at autopsy, but from a functional point of view the heart muscle is at fault, and it is this failure of the heart muscle which causes death, and which demands early recognition and physiological treatment for a successful outcome. I am of the opinion that it is far more frequent than is generally supposed, from the fact that I have in my office files records of 478 cases of so-called "myocarditis" observed since 1911.

Christian[1] has repeatedly called attention to its frequency and in speaking of the frequent diagnosis of mitral insufficiency, states: "Some cases with apical systolic murmurs have normal hearts. * * * Few, if any, have a genuine organic mitral insufficiency, hence when you make that diagnosis in an organic sense, you are wrong in 99% of cases." An intensive study of all my cases will furnish the basis for a future paper, but it was considered of interest to tabulate the causative factor in one hundred of these cases, taken at random from the files.

According to Fahr[2] 75% of chronic heart muscle disease is associated with hypertension, and he considers that acute or chronic infections play a minor role. An analysis of these one hundred cases of mine does not bear this out, and one is struck at once by the frequency of chronic gall bladder disease.

TABLE.

Showing probable contributing cause in 100 cases of myocardial insufficiency:	
Hypertension (arterio-sclerosis & nephritis)	46
Chronic gall bladder disease	38
Influenza	12
Lues	5
Chronic Tonsillitis	4
Chronic Sinusitis (Frontal & Maxillary)	3
Chronic Pancreatitis	3
Pyorrhoea & Alveolar Abscess	7
Diabetes Mellitus	3
Hyperthyroidism	2
Asthma	3
Indefinite, sedentary habits, obscure history	9

On the other hand Reid[3] deprecates the frequency with which the diagnosis "myocarditis" is made and believes it is often a cloak for ignorance. Any one who has followed autopsies is impressed by the frequency with which degeneration of the heart muscle is found in chronic diseaes, and if one errs on this side, it results only in inconvenience to the patient for a limited time, while failure to recognize the condition is often the cause of sudden death or chronic invalidism.

SYMPTOMS.

The history is of the utmost importance, and cannot be too carefully taken. The symptoms which occur most often in dyspnoea, many times elicited only on exertion, patients noticing that they are quite short winded after walking upstairs, while at other times they are quite comfortable. Cough is a common symptom, usually at night, non-productive in character, and also aggravated, or brought on by exertion. Patients, as a rule, do not complain of any pain in the cardiac region and palpitation has been the exception in my experience. Brooks[4] has already called attention to

the frequency of abdominal symptoms, and many of my cases consulted me for such; these abdominal symptoms disappearing after the heart had been restored. Fishberg[5] has called attention to jaundice in myocardial insufficiency, but this must be considered a rather rare symptom, and undoubtedly secondary to the passive congestion of the liver, which, however, is usually present.

Albuminuria is a frequent accompaniment and may be dependent entirely upon the heart action, the kidney function often not being demonstrably below normal. On the other hand, one must not forget that every case of long standing nephritis is associated with degeneration of the heart muscle, and careful examination of the heart should be made in every such case. Oedema of the ankles or lungs must be considered as a late symptom and if one waits for its appearance for a diagnosis, the prognosis is graver and the convalescence much prolonged.

Occasionally, there is an associated fusiform dilatation of the aorta, which in my experience, will diminish in size as the heart muscle regains its tone. An explanation of this phenomenon is not at all clear, but I have repeatedly observed it after frequent skiagraphs of the chest taken at 2 meter distance from the tube.

PHYSICAL SIGNS.

The size of the heart is no guide to its functional capacity, being often enormously enlarged and hypertrophied with no signs of lack of efficiency, while in the senile type of case with brown atrophy of the heart muscle the organ is small. An increase in dullness to the right, however, without corresponding increase to the left should lead to suspicion, while an apex beat displaced downward should also cause suspicion. The latter, however, must not be confused with the so-called dropped heart, 2present in ptotic individuals who often present certain symptoms suggestive of myocardial insufficiency. A soft systolic murmur audible at the apex, is usually present, often not transmitted and often heard best in the 4th interspace about 3 cm. to the left of the sternal margin, while in other cases it is audible only after exertion. In some cases the murmur is quite loud, harsh, transmitted up the axilla and cannot be differentiated from an organic heart murmur, but it will disappear entirely after the heart muscle has recovered its tone. (See cases.)

The systollic blood pressure will vary, some beats, when taken by the auscultatory method, being audible at 20 to 30 m.m. higher than others. In discussing Christian's[1] paper before the Southern Medical Association, Canby Robinson called attention to this inequality in the systolic blood pressure as an evidence of myocardial weakness, and so frequently is it present, that I regard it as a most valuable sign. It requires no particular skill to detect this inequality in systolic blood pressure, and were its significance more universally accepted, it would tend to lower the incidence of heart disease considerably. Guthrie[6] several years ago called attention to a phenomenon he had observed in failing heart muscles, which obtained when the patient was made to expire violently against a closed outlet, the mouth being closed tightly, and the nose being held firmly closed with the hand. Increase in cardiac dullness was noted even in the normal heart, but with a failing heart muscle the return to former size was very much delayed. This is a valuable sign, but requires more or less expertness in the art of percussing.

In my experience the Dwight-Frost[7] cardio-respiratory test is the most valuable means at our disposal, or testing, directly, the capacity of the heart to respond to strain. The effort syndrome has for years been brought out by having patients do various exercises, but the strain on the heart will vary to such an extent, depending upon the physique of the patient, that it is of small value. In the Dwight-Frost

apparatus, we have the means of definitely measuring the strain upon the heart muscle by the aid of a guage which registers the positive pressure in the lungs, so that the personal equation is reduced to a minimum.

The Katzenstein test for myocardial insufficiency, advocated by Antunes[8] may be mentioned, although I have had no personal experience with it. It depends upon observation of the systolic blood pressure before, and while the femoral arteries are compressed at the crural arches for two or three minutes.

TREATMENT.

Prophylactic treatment depends upon a recognition of the predisposing causes of myocardial insufficiency and consists in (1) caution against undue exercise (sufficient to cause dyspnoea) in all cases of organic valvular heart disease, all nephritics and cases of hypertension, and those recently recovered from an acute infectious disease, or the victims of severe chronic infection, in which infection of the gall bladder must be included; (2) moderate, regulated exercises to tone up the weakened heart muscle, and avoid a failure of same.

Curative treatment will consist of physical and medicinal. Absolute rest in bed for a period of time from four weeks to four months, depending upon the severity of the condition, is the prime requisite. I have seen sc many cases which have been told to "be cartful about exercise," which should have been put to bed at once, that I am inclined to think the value of rest is often overlooked. Daily massage, is of course required, to keep up the tone of the skeletal muscles. If the condition has followed an acute infection and the myocardial insufficiency, can be detected only after heart strain, it is not necessary to put the patient to bed, but he should be cautioned to go upstairs slowly, and to avoid all exercises sufficient to cause dyspnoea.

Digitalis in full doses according to the Eggleston plan, or cat-unit doses of Pratt is indicated in the severer types, but the milder types require only tonic doses. The heart in this condition can be likened to a fatigued horse and digitalis to a whip. It is far wiser to lighten the load than to use the whip to excess, and I have had excellent results in giving ten to fifteen drop doses of a standardized tincture, three to four times daily, for four days, with an interval of rest of four days.

The liver, being in a state of passive congestion, demands res also, and this is accomplished by attention to the bowels and a low protein diet. Unless there is oedema and complicating nephritis, I can see no reason for restricting fluids and salt, but excessive amounts of fluid are certainly not to be advised.

As soon as the condition of the heart muscle warrants, the exciting cause in the case of focal infections, should be removed.

A few brief histories will exemplify some of the points I have raised:

Case 1. Mr. B., age 85, has been under continuous observation since 1911, at which time he had constant hypertension of from 220 to 240, but leading a strenuous business life; no serious illness or infection since childhood, and temperate habits. There was no atheroma nor renal impairment, and no cardiac murmur. He was advised to restrict activities, but the advice was unheeded. In 1912 he had an acute dilatation of the heart with loud systolic blow at apex, precardial thrill, tachycardia, oedema of lungs and extremities, albuminuria and granular casts, with an enormously enlarged, boggy liver. Murmur was considered as organic by two consultants, and six months was given as the limit of life. Kept in bed for three months, with daily massage, digitalis, and kept on a low protein diet. After getting out of bed, exercise was only slowly permitted, and elevator was installed in his home, while he was constantly cautioned against overtaxing himself. Illness compelled giving up all business and he has been living a life of ease since 1912. For the past ten years he has been in perfect health, blood pressure varying from 140 to 160; heart is normal in size, no murmurs are audible and there is no albuminuria and only an occasional hyaline cast, with a phenol sulphonephthalein output of 50% in two hours. His was an example of "hyper-

tensive myocardial insufficiency" and the reparative processes of nature are well exemplified in his case.

Case 2. Mrs. K. First seen by me in 1918 when she was 45 years of age. Her principal symptoms were dyspnoea on the slightest exertion, paroxysmal, dry cough, worse at night, which caused severe dyspnoea, at times with cardiac palpitation. Progressive anemia. She had had typhoid fever and measles as a child but no history of any other infections. She had noticed dyspnoea for four years previous on climbing stairs, but this symptom had been getting progressively worse for the previous two months when the cough had made its appearance. Her anemia had been noticed for a year. Physical examination revealed a fairly well nourished woman, pale and with plain evidences of air hunger in dilated alae nasi and short rapid respiration. The heart was enlarged both to the right and to the left, the transverse diameter measuring 16 cm. at apex. A soft systolic blow was audible at the apex, extra systoles were audible, while there was evident myocardial weakness, the systolic blood pressure varying from 160 to 120, with a diastolic pressure of 70. There were definite signs of fluid in both pleural cavities, more extensive in the right. Liver enlarged and palpable 4 cm. below costal margin but not sensitive to palpation. Blood examination showed a moderate secondary anemia. Urine contained albumin and hyaline casts.

After aspirating about 1500 cc. of clear, straw-colored fluid from the right lung, a two-months' rest in bed with digitalis therapy and a low protein diet her dypsnoea promptly disappeared. Her heart became regular, the apical systolic blow disappeared, urine showed no albumin and her liver became normal in size. She has no further evidences of cardiac weakness and at present is leading an active life. The only causative factor in this case was to be found in a positive Wassermann reaction on the blood.

Case 3. Mr. S., age 65, has had asthma all his life at frequent intervals, but has led an active life and rarely confined to bed. When first seen by me in March, 1923, his principal symptoms were attacks of vomiting, gastric distension, belching, almost constant nausea and loss of weight. On questioning, he admitted dyspnoea on very slight exertion, but thought it came from his asthma, which, however, had not bothered him to any extent since 1914, following an operation on his nose. Three weeks previous he had suffered a mild attack of La Grippe with temperature 101.1°. Physical examination revealed an emaciated male with anxious expression but with no dyspnoea. The heart was enormously dilated, the apex beat being 4 cm. outside nipple line over which a thrill could be felt, the beat of an expansile type. A loud systolic blow was audible at the apex, pulsus alternans present, the systolic blood pressure varying from 130 to 110; diastolic 70. Lungs—scattered, sibilant rales in both lungs, but no evidence of consolidation. Liver—enlarged and sensitive, especially over left lobe.

A two-months' rest in bed with digitalis resulted in disappearance of the murmur at the apex, which receded to the nipple line, and systolic blood pressure became regular at 130. Gastro-intestinal symptoms disappeared after the first week in bed. For a year he gave up active business and only gradually increased his physical exertion, but at present is active head of a large mercantile house, and has been able to "carry on." I see him at infrequent intervals and at times the systolic blow at the apex is audible, with displacement of apex beat slightly outward and a return of the alternation in his systolic blood pressure, always the result of overexertion. His response to the Dwight-Frost[7] cardio-respiratory test shows that his heart muscle is still unable to withstand strain and he has to be constantly reminded that overexertion is to be avoided. A mild pulmonary infection in a chronic asthmatic was sufficient to cause failure of the heart muscle, on account of his not resting up after this supposedly mild attack.

The three histories briefly outlined show marked failure of the heart muscle, but by means of the Dwight-Frost[7] cardio-respiratory test, one is able to detect signs of failing heart muscle before pronounced symptoms present themselves. The technique of this test was demonstrated by me at the last meeting of the Southern Medical Association, and will shortly appear in the official Journal, but cannot be considered here.

SUMMARY.

I. The diagnosis of failing heart muscle should be made early.

II. Rest is as important as any drugs in its treatment.

III. Alternation in the systolic blood pressure is a valuable sign of failing heart muscle.

IV. The Dwight-Frost cardio-respiratory test is of greatest aid in recognizing early cases of myocardial insufficiency.

V. All acute infections leave their imprint on the heart muscle and careful examination of the heart should be made in all patients convalescing from such.

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DISCUSSION.

Dr. Irving Wolff (Monroe): I thoroughly enjoyed Dr. Eustis' paper and the more do I want to stress the early recognition of the weakened or failing heart muscle. Too many of us have paid little attention to the diagnosis of this condition. It has been more noticeable in my practice here during the last flu epidemic that visited us. I have in mind some twelve or fourteen cases, especially three or four of them, where the abdominal symptoms were the most important and first symptoms of this condition. This is, in my opinion, the most important of all. Any of the intestinal upsets that our patients have, whether it be in the form of so-called belching up of gas or whether it be in some pain or whether or not it is some slight dyspnoea upon exertion makes no difference.

I think that we should probably go back first to our abdominal symptoms and then build upward. I have two cases now that I have held in abeyance trying to make a diagnosis of a weakened heart condition following some gall bladder trouble. These cases have not ever developed any mitral murmur at all. Upon getting out of bed, even walking from the bed to the bath, a distance of something like twenty-five or thirty feet, they begin to complain, first, of a fullness in the abdomen followed next by a shortness of breath. There is now a beginning slight hypertension taking place but I have not, as I said, found any murmurs. The P. S. T. test is practically normal; there is a very faint albumin present upon the acetic acid test with a rare hyaline cast.

I have diagnosed these cases as a failing heart muscle, regardless of the fact that I have failed to find any slight enlargement of the heart. We should not wait until a heart becomes chronic to make a diagnosis.

I thoroughly concur in what Dr. Eustis has said about a murmur. Too many of us make a definite diagnosis of heart disease upon finding a mitral murmur when as a matter of fact that probably is not the cause of the case. I want to stress upon you the importance of finding these conditions in the acute diseases that we are having now. I have a case in mind now. Some four months ago I was called out to see this patient and a diagnosis of influenza was made. He remained in bed for two weeks, was out of bed for three weeks, then began to complain of shortness of breath and a fullness in the abdomen. The blood pressure readings, a man of fifty-five years of age, were 130 systolic and 80 diastolic. Three weeks after the making of these blood pressure readings I was called out to see him and was told that he was having some kind of a spell. Just as I walked into the room I found him with a convulsion. The systolic blood pressure was 260, the diastolic 110. There was a slight enlargement to the left and downward, with a very faint mitral murmur, systolic in time.

This man was put to bed and put on the Halsey as well as the Eggleston method of digitalization and he improved for a week. Some two or three days after that he had another convulsion and died. At no time was I able to find a kidney function test below normal nor was I able to find any but a very faint trace of albumin as well as hyaline casts. (Applause.)

Dr. B. A. Ledbetter (New Orleans): Mr. Chairman and Gentlemen: I have been very much interested in Dr. Eustis' paper for the simple reason that we all know and realize that heart disease is carrying off more people than

any disease in the world and is growing more rapidly than any disease in the world except cancer. Therefore, it is a subject that is of great interest to us all, the surgeons as well as the internists. Furthermore, we know less about the heart than any other organ in the body. Up to this last war, the medical profession was absolutely in the dark regarding heart conditions and the diagnosis of heart disease. In Dr. Eustis' paper he brings out and he lays stress on the point of gall bladder trouble and heart disease. We all admit that any infection, as a matter of fact, all of our troubles come from focal infections. Therefore, any infections that would disturb the gall bladder would naturally disturb the heart. All infectious diseases, as a matter of fact, infect not only the heart but every organ in the body. Therefore, we must not lose sight of the fact that that same infection that attacked the gall bladder also attacked the heart muscle.

We see the results of an impaired heart probably quicker than almost any organ in the body because the heart is the most important organ in a man's body. Gentlemen, we must not lose sight of the fact that there is a focal infection somewhere. To my mind gall bladder trouble does not necessarily impair the heart muscle but it is that infection, it is the same infection that caused that gall bladder trouble that is weakening the heart muscle.

We all realize and appreciate the fact, and I believe we all agree that we should not lay too much stress upon the heart murmurs from the diagnostic standpoint. Though they are important, they are important from the point of view that it is up to us to find out what that murmur means. It may mean nothing. Dr. Eustis in his paper stated that very few people have mitral murmurs of the mitral valve as organic. I can't believe it. They are not nearly so numerous as the aortic murmur but they do exist, especially from a rheumatic condition. Any murmur where we find an intermittent pulse, an irregular pulse, I say, gentlemen, we have to look upon that case with grave suspicion. You can't tell that man he has no organic trouble, but on the other hand, suppose that you find the mitral murmur with no symptoms that would lead you to believe it is serious. The man is perfectly well in every respect. He carries on his work. Then I don't believe we are justified in telling that man he has organic heart trouble.

In another part of Dr. Eustis' remarks he mentioned the fact that syphilis is not looked upon as so prevalent a cause of heart disease. I want to say, gentlemen, that ninety per cent of all aortic lesions, in my opinion, are due to syphilis. In these cases of aortic insufficiency you very seldom find that they have not had or have at the present time a very high blood pressure. While I am on this point I want to express the fact that I have on numerous occasions diagnosed aortic insufficiency with the blood pressure. Invariably in aortic insufficiency you get a tremendous blood pressure. For instance, you have 190 or 200 systolic pressure with a 60 diastolic pressure. That, gentlemen, is almost pathognomonic. You rarely need a stethoscope to diagnose that condition, and I believe that 90 per cent of these cases are due to syphilis.

Dr. Eustis laid stress on the point that we should early recognize the heart muscle; that is, in other words, to find out as nearly as we can the condition of that heart muscle. That is a very, very difficult thing for us to determine. That, to my mind, is one of the most important things, and the method that I have used with a great deal of success but not always positive is the fact of a man's blood pressure. For instance, take his blood pressure before, record it carefully, then exercise him. Five minutes or three minutes after vigorous exercise take his pressure again and 90 per cent of the weak heart muscles can be determined that way. You know, exertion increases blood pressure. A man can't have a low blood pressure and a good heart muscle for the reason that the high blood pressure is based on a good, sound heart at that time. Now if this blood pressure drops and does not go up, then I think I am justified in saying that that man has a really failing heart muscle. (Applause.)

Dr. N. F. Thiberge (New Orleans): I want to insist upon two points that have been brought out in Dr. Eustis' paper but I would like to bring them out a little more clearly. One of them is the value of elimination in weakened heart condition. The American Medical Journal spoke of several cases of paresis that had gone on years and years and at autopsy the spirochaete was still found living and active in the tissues.

We must not forget that the heart muscle not only needs to be supported but we have to do all we can in order to remove the cause at work and to remove the poison that is left in the system by the micro-organism or the focal infection, whatever it might be. That is one point that I would like to bring out—elimination.

The second point is the importance of dyspnoea as an indication of a weak heart muscle. In our hay fever and asthma clinic at the hospital we are always very suspicious whenever the case turns out negative with the skin test, and often when we run them through an X-ray examination

we are not at all surprised to find heart lesions that have been overlooked and if the warning symptoms of dyspnoea had been heeded heart lesions would have been recognized.

Dr. D. O. Willis (Leesville): Mr. Chairman and Gentlemen: I just want to say a few words as a plea to the general practitioner, based on my past experience and opinion. Dr. Ledbetter, in his talk, mentioned how little we knew about the heart before the War. I want to corroborate what he said. I had always thought I was doing about the best I could to try to make a diagnosis in my cases and find out the condition of my patients, but while I served in the army I happened to be on a board that examined hearts, one after another, all day, and I found out I never had known a thing in the world about the heart before, although I had been practicing medicine for some fifteen or seventeen years. I just didn't know a thing about it, and today I go about with my brother practitioners and see their cases with them, and I find that they haven't used a stethoscope with a patient who has had an influenza or perhaps other conditions that might cause heart lesions. I have found that the routine examination of the heart in all conditions shows me much more disturbance with the heart than I formerly knew of. I would no more think of having a patient with influenza or any suspicion of a focal infection without thoroughly examining the heart with a good stethoscope than I would think of having a typical case of malaria and not giving quinine.

I am saying this as a plea to the general practitioner who might be a little careless in his examinations, do not disregard the extreme importance of a careful examination of the heart in all conditions that we look on as being the cause of heart troubles.

I recently treated a lady who had influenza. She was forty-eight years old. She never went to bed from her influenza but came to my office. I treated her and cautioned her to go home and take care of herself. About two weeks later I was called to see her and found that she had a weak heart muscle. I put her to bed, put her on eliminative treatment and cautioned her to stay in bed until I saw her again and to take care of herself thoroughly. To my surprise when I saw her two weeks later she had been up without my consent and just a few days later she died from a weak heart.

This final plea to the general practitioner who might be a little careless to examine very carefully and look for these weak heart muscles and for the weakened condition of the heart in general. (Applause.)

Dr. W. S. Kerlin (Shreveport): Let us not overlook the importance of cardio-sclerosis as a probable etiological factor in producing myocardial weakness. We know that cardio-sclerosis occurs in the young as well as in the old without any extensive arterio-sclerosis. Autopsies have been performed on young men in the thirties in whom the peripheral vessels were apparently not much involved and the vessels of the heart itself were involved. If the heart muscle receives frequent insults from gradual occlusion of the coronaries wies liberation of large or small emboli, we can readily see that the heart muscle is going to be damaged thereby. I used to believe that if you got such an infarction it meant sudden death. I have arrived at the conclusion from reading articles by pathologists who have studied this condition at the autopsy table that you can have repeated occlusions, that is from small emboli, which cause an infarction of the heart muscle and produces a temporary weakness and the heart muscle will recover. It depends entirely upon the size of the infarction as to whether death is going to be immediate or delayed.

I have had occasion to observe two cases recently in which, without any apparent previous heart disturbance, they were seized with sudden pain in the chest, radiating to the gall bladder region. The blood pressure in two cases I remember didn't register above 70 systolic and one that lived for three days with a systolic pressure that did not register above 70. It just seems to me that a good many of these conditions are really cases of cardio-sclerosis with thrombosis. In the newspapers we frequently read where people have died of acute indigestion, etc., very suddenly. I believe that a good many of these cases are cardio-sclerosis, a gradual occlusion with resulting myocardial deficiency and then finally you get a pretty large vessel blocked, which of course means death.

Dr. Eustis (in closing): I won't take much time. Dr. Wolff called attention to the belching that takes place in these cases, which I neglected to include in my paper. I didn't take up the treatment of all the symptoms. Dr. Fishberg has shown in an analysis of a large number of cases of myocardial insufficiency that there is a marked reduction in the hydrochloric acid of the stomach. You will find the administration of this acid often a valuable aid in the treatment of this symptom of myocardial insufficiency.

I want to take exception to my friend, Dr. Ledbetter. The statistics I quoted were verbatim from Dr. Henry Christian, recognized to be an authority on heart disease. When Dr. Ledbetter speaks of syphilis and aortic insuffi-

ciency, that is a different thing. We know that aortitis, in 90 per cent of the cases, is due to syphilis and the aortic insufficiency that Dr. Ledbetter speaks of is probably secondary to aortitis. So he is right in that respect, but I was not speaking of this type of heart disease. I was speaking of myocardial insufficiency and I didnt even call it myocarditis.

I am more interested in calling the attention of the general practitioner to the routine examination of the heart and to urge him to tell the patient, not that he has organic heart disease, but that he has a *weak heart muscle* and to curtail his activities. Dr. Willis practically covered my final plea. (Applause.)

THE TREATMENT OF PURPURA HEMORRHAGICA BY SPLENECTOMY.*

WITH THE REPORT OF A CASE.

W. S. KERLIN, M. D.,

SHREVEPORT, LA.

The etiology of purpura hemorrhagica is unknown. Sir William Osler referred to purpura as "That obscure and interesting manifestation of which we know so much and at the same time so little." It is not strange then that the therapy should be empirical. Credit for the suggestion of splenectomy as a cure for purpura hemorrhagica is usually given to Kaznelson of Prague, who performed the first splenectomy for this disease in 1915.

Giffin and Halloway of the Mayo Clinic reviewed the literature in August, 1925, and rendered a detailed report of twenty-eight cases treated by splenectomy. The past month Allen O. Whipple, of New York City, reviewed the literature and reported eighty-one cases in which splenectomy was resorted to as a therapeutic measure. Of the eighty-one cases there were seventy-three of the chronic type, which gave the most spectacular results. Eight were of the acute type. There were only six deaths among the chronic variety, while seven of the eight acute cases operated upon died. Of the sixty-one followed cases fifty-one gave good results, four fair and six poor. Fourteen cases were reported that have gone a year or more without recurrence of symptoms. On the other hand a few cases were reported where there was later occasional nose bleed and petechiae.

The relation of decreased blood platelets to purpura hemorrhagica is well recognized, whether this decrease in blood platelets is due to failure of the bone marrow to form new platelets or to an over-activity of the reticulo-endothethial cells in destroying them is still a debated question. The general opinion would seem to favor the theory, championed by Kaznelson that the blood platelets are formed in normal numbers but are destroyed by overactive phagocytosis in the spleen and other parts of the reticulo-endothetial system. That the normal spleen destroys platelets is favored by the fact that there is usually a sharp rise in the platelet count after splenectomy. It is also generally agreed that the platelets are the most important formed elements concerned in blood clotting. The results of splenectomy in purpura seem to depend upon whether the major part of platelet destruction is taking place in the spleen and also upon the inciting cause.

In the so called chronic type of disease with hypertrophied spleen this would seem to be the case, for it is in this type that removal of the spleen produces lasting results.

In most cases reported, at some time before operation the platelets numbered less than 50,000. In a few cases the counts were in the hundreds. After operation the platelets almost always rose rapidly to normal or above, but diminishing to a lower level within a few months afterwards. Many of the cases reported showed a persistently low platelet count after operation without recurrence of symptoms.

So far as is known at prtsent only well defined cases should be recommended for

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splenectomy, therefore a correct diagnosis becomes of special importance. Purpura is characterized by the following findings, a low or absent platelet count, prolonged bleeding time, failure of the clot to retract and normal clotting time. The main point to be decided once the diagnosis is made is whether the patient has the chronic recurrent form or whether it is the acute fulminating type. As stated before the former type is usually promptly and permanently cured. The latter type is seldom benefitted. The chronic recurrent type gives a history of repeated attacks of purpuric splotches, irregular bleeding from gums and in women menorrhagia.

When one considers the failure in many cases of medical measures, including transfusion to control the main symptom, bleeding; and then observe the amazing immediate improvement following splenectomy in so called chronic purpura hemorrhagica, the enthusiasm on the part of the medical profession can be well understood. It may be said that this operation has contributed the greatest advance in the treatment of the purpuras, but limited largely to the chronic variety.

The following case report illustrates the apparent life saving and curative effect of treatment by splenectomy of a chronic recurrent case:

C. W., white, female, aged fourteen years, a school girl, was admitted to the T. E. Schumpert Sanitarium, Shreveport, La., January 4, 1926, on the surgical service of Dr. J. C. Willis. Her chief complaint was profuse and prolonged bleeding from the vagina during the menstrual flow. The present complaint began in June, 1925, with the onset of her first menstrual period, a profuse flow persisting for eleven days. During a copious flow the following month, a dilatation and curettage was done with temporary relief. The latter part of August she began menstruating again, which persisted for about two weeks. Radium was used during or immediately after this attack. No further bleeding occurred the following four months; but about two weeks ago, the bleeding returned and had not ceased upon admission to the sanitarium.

Her mother thinks that the tendency to bleeding began soon after taking the Pasteur treatment in 1918; as some two or three weeks later she first observed spots of blood on pillow from bleeding gums. She also discovered bluish black spots over different parts of the body following slight injuries. Later on she noticed some blood in the urine and occasionally altered blood appeared in the bowel movements. The above phenomena recurred at infrequent intervals from 1918 up until beginning of menstrual flow; the date of onset of real complaint. She had never had any serious illness in past life, except pneumonia. At the age of nine years following extraction of some teeth she bled for twenty-four hours. The tonsils were removed in 1921 with troublesome oozing for about three days.

Her family history is unimportant.

Physical examination: The patient is a very well developed, well nourished girl; but very pale and seems to be extremely anemic. A few dark splotches are scattered over the lower extremities. There are several pigmented scars over legs from previous injuries and hemorrhages. There is no adenopathy; reflexes are normal; lungs are normal. The heart is normal, except for a functional systolic murmur over apex and base. The abdomen is moderately distended and tympanitic. The spleen edge is palpable but not firm or tender. The liver is not enlarged. She is bleeding and passing clots from vagina. The total red cell count is 2,060,000, total leucocyte count 9,062, polymorphoneculear neutrophiles 68%, large lymphocytes 10%, small lymphocytes 22%, hemoglobin 60%, coagulation time 4½ minutes, bleeding time 6 minutes, platelet count 40,000; Wassermann negative, urine negative for abnormalties.

A diagnosis of purpura hemorrhagica was made and splenectomy advised should transfusion fail to check the bleeding.

Course of disease: Following two transfusions of citrated blood on January 6th and 14th, bleeding from vagina subsided. Four days later the total red count was 2,730,000, hemoglobin 65%, bleeding time five minutes, platelets 35,000. She was permitted to return home with the hope that she would continue to improve but within two or three days the bleeding recurred. She was readmitted January 28th in a worse condition than upon her discharge nine days previously. We then realized that the operation should have been performed earlier. The total red cell count had decreased to 1,780,000, platelet count 40,000, hemoglobin 40%. Splenectomy suggested but considered inadvisable for the time being on account of her general condition. She was trans-

fused the following day with 300 c.c. citrated blood and again with 400 c.c. five days later but to no avail, as she continued to lose ground, the bleeding from the vagina increased. Her general condition now was extremely bad, her color being of a waxy hue. The total red cell count dropped to 1,240,000. As a last resort and with some misgivings as to the ultimate outcome her spleen was removed February 8. The operation was performed very quickly with the loss of only a minimum amount of blood. The spleen, about three times the normal size, was attached by a fairly long pedicle and entirely free from adhesions; it was smooth and bluish gray in color.

Within a few minutes after removal of spleen her color became noticeably improved, along with some improvement in her pulse rate and volume.

She passed a few dark clots from vagina occasionally the day of the operation but none thereafter. The improvement was very rapid considering her condition at time of operation.

Four days after operation the total red cell count was 1,340,000, total white cell count 11,150, polymorphonuclear neutrophiles 79%, large lymphocytes 5%, small lymphocytes 16%, platelet count 40,000.

Twelve days following the operation the total red cell count was 2,100,000, platelet count 150,000, reticulated red cells 8%, nucleated red cells 16% (normoblasts) observed for first time and indicating active bone marrow reproduction.

She was discharged fifteen days after operation following an uneventful post operative recovery except for a moderately low grade fever which persisted for fourteen days.

Pathology of spleen-weight 347 grams, frozen sections showing fibrous and lymphoid hyperplasia.

March 26, 1926, returned for observation stating that she felt fine and was gaining strength, total red cell count 3,200,000, total leucocyte count 10,600, platelet count 160,000, bleeding time 4 minutes.

She was seen again four days ago and her improvement was very evident even since last observation. She is gaining in weight and strength and she no longer has the sallow anemic appearance that had existed for the past year. The total red cell count was 3,800,000, hemoglobin 75%, platelet count 148,000.

DISCUSSION.

Dr. I. I. Lemann (New Orleans): Three years ago at Atlantic City at a meeting of the Association of American Physicians, I heard the report of Dr. Brill of New York, giving his experience with splenectomy in purpura hemorrhagica. To me the report was dramatic. He described patients practically in extremis. Their condition was worse than that in the case that you have heard from Dr. Kerlin. The result was even more striking. The bleeding was so great at the time of the operation that the surgeon feared he might not be able to close the incision, and yet once the pedicle was ligated and before the spleen was out, the hemorrhage had stopped and the wound was closed dry. The patient was from that time immediately better and made an uneventful recovery.

The report was all the more interesting and dramatic to me because I had left at home a boy about seven years of age who had purpura hemorrhagica which we had not been able to check or control by repeated transfusions. So immediately upon my return to New Orleans, this boy's spleen was removed by Dr. Isidore Cohn and the purpura was at once stopped. He has had no return. The boy is in absolutely perfect health now, three years after this splenectomy was done. The last blood examination showed a perfectly normal condition of the blood. It is only fair to say that our case was not as severe as Dr. Kerlin's case or the cases of Drs. Brill and Rosenthal.

As Dr. Kerlin has told us, it is most important that we should realize that not all cases of purpura, even extreme cases of purpura, are purpura hemorrhagica essential; that is to say, thrombocytopenic or thrombo-cytolytic purpura, meaning by that, a purpura in which there is a low blood-platelet count. It is only in this type of purpura hemorrhagica where there is a low platelet count that we may expect a benefit from splenectomy. We may have a purpura hemorrhagica symptomatic which may be just as severe as the purpura hemorrhagica essential thrombo-cytolytic. I saw a few months ago such a case in a young man of thirty odd, who had been under observation some ten years, with diabetes. He subsequently, a couple of years ago, became leutic and developed a marked anemia. His end came with a tremendous purpura hemorrhagica, oozing and bleeding from gums and nose, with spots all over the body, and finally ending with high temperature. This man, however, did not have the earmarks that Dr. Kerlin has pointed out to us as being the disease benefited by splenectomy.

The next point that I wish to stress is the relation of the thrombocytic count, the platelet count, to the purpura. It has been suggested that it is the lack of the platelets that causes the purpura. I am not altogether convinced of that and in my own report of our case I have suggested that perhaps the relation of the platelet

count to the disease is not one of pathogenesis but rather the relation as we see of leukocyte count to inflammation; just as we have a leukocytosis in acute appendicitis; for example, we may have a low platelet count in essential purpura hemorrhagica. My feeling about this is accentuated by the experience of seeing the platelet count fall again after the primary rise following splenectomy and the failure of purpura to appear when the platelet count falls. (Applause.)

Dr. Kerlin (in closing): I haven't very much more to add as Dr. Lemann, in his discussion, covered the subject so thoroughly and really said what I had intended to add. Like Dr. Lemann, I am not altogether convinced that the reduction in platelets is the only cause of the bleeding in these cases. There must be some other condition, possibly in the reticulo-endothelial system, but certainly it seems that the platelets have a very vital connection in this respect because in all these eighty-one cases reported in the literature the counts were invariably below 50,000. Some of the counts were in the hundreds.

Another interesting point is to study the blood smears of these cases before operation and compare the relation of the platelets to the blood cells. Basing the normal red blood cell count at 5,000,000 and platelets at 300,000, you would expect to find about one platelet to each six red cells. As a matter of fact, in this particular case you could go over and over several fields and not find a platelet. Eight or ten days after operation, in observing the smear, you could just see it loaded with platelets, which is further proof that the platelets have certainly increased.

Practically all the cases operated upon have been in young females—not that it doesn't occur in males but it is certainly more common in females and these are the type of cases that you have to resort to splenectomy in for the simple reason that the bleeding comes on with the onset of the menstrual flow. Each month with the onset of menstruation there is a profuse bleeding and you have to do something to check it. In the male it seems that the bleeding occurs usually from the gums, possibly from the bowel, and apparently it is much more easily controlled.

Another point I would like to stress is to make a correct diagnosis. This case had evidently not been diagnosed correctly or the treatment resorted to would not have been put into effect, because we all realize that curetting and packing these cases will not do them any good.

Likewise with radium: It is very doubtful that it will do any good.

I wish to thank Dr. Lemann for his discussion and the other doctors for their attention.

POST-OPERATIVE CHRONIC DUODENAL OBSTRUCTION WITH GASTRIC DILATATION.*

REPORT OF A CASE.

DONOVAN C. BROWNE, M. D.

NEW ORLEANS.

Duodenal obstruction in the sense of a motor retention within the duodenum is a clinical entity that may be considered under two headings. First: The acute obstructive type, associated with acute dilatation of the duodenum, as well as dilatation of the stomach. This condition follows, as a rule, abdominal operations. Second: The chronic type which results either to adhesive webs or bands, or from alimentary ptosis of a marked degree with duodenal kinking or from abnormalities in the anatomical relationship existing between the mesentery and the duodenum. It is to the second condition, particularly, that our interest has been directed in the present instance. A search through available literature has shown a dearth of references in regard to chronic duodenal obstructive lesions up to within a very recent period.

The first recorded reference on this subject was made by Boernerous in 1752, in which he describes the symptoms of chronic duodenal obstructions. Yeates again in 1820, makes a note of toxic symptoms which he attributes to the partial occlusion of the duodenum by the transverse colon. A considerable mass of literature has collected since this time, in which the question of the anatomical relations of the duodenum to the vertebral column and the mtsenteric vessels has been dealt with in detail. In 1897 Louis Dwight made a series of casts of the duodenum, which were later studied by Kellogg. In these Kellogg noted a uniform pressure defect or narrowing at the

*Read before the Orleans Parish Medical Society, February 22nd, 1926.

juncture of the first and second portions, over the vertebral column, and an acute angulation at the duodeno-jejunal flexture, a good proportion demonstrated a distinct grooving by the superior mesenteric artery. He draws the conclusion from these facts that "The duodenum is placed at disadvantage in the matter of drainage and is easily subject to mechanical obstruction." Valuable contributions along this line have been made by Bloodgood, Codman, Robertson, Conor and others, in which the subjects of prolapsed cecum, short mesentery, visceroptosis, *gastro-optosis*, and their relation to duodenal obstructive processes have been dealt with. A very comprehensive review of the literature was given by Kellogg and Kellogg in 1921.

It is not an uncommon event for the surgeon at operation to find bands which extend from the duodenum to the under surface of the liver and gall bladder. These may in some cases be simply variations of the gastro-hepatic ligament, or else anomalous folds of the peritoneum. In other instances, such bands may be of true inflammatory origin. In either event, should the duodenum become fixed or immobile, prolapse of the stomach or colon will bring about partial or complete obstruction of the duodenum when the patient assumes an upright position.

Moreover, isolated cases have been recorded recently where duodenal occlusion has occurred as a result of adhesions forming between the gall tract and the first or second portion of the duodenum. The most notable feature of this, as well as other types of duodenal obstruction, has been the marked toxic symptoms which arise. The toxicity of retained duodenal contents is in sharp contrast to the rather mild poisoning resulting from gastric stasis. The most far-reaching piece of experimental work along this line has been carried out by Whipple, Stein, Bernheim and Maury, in which they have demonstrated the chemical nature of the toxic bodies following stagnation within the duodenum, and have shown that death occurs from chemical substances rather than from bacterial toxins.

SYMPTOMS.

The symptoms in these cases may be divided into mechanical and toxic. The mechanical symptoms will of necessity vary somewhat with the point and extent of the obstruction. If this occurs in the first portion we have a picture simulating more or less a pyloric obstruction, with epigastric pain occurring one to two hours after meals, fullness and a sense of pressure or distress in this region, which may be relieved by the regurgitation, often by lying down, or by pressing in and upward of the abdominal wall. This relief occurs when the obstruction is the result of a downward pull by a prolapsed colon or stomach. Hyperacidity occurs irregularly. They often experience a sudden breaking loose and gurgling sounds, after which there is some relief. Gastric dilatation may develop as the process progresses. Should the compression occur in the second portion about the ampule of Vater a chronic jaundice with enlarged and sensitive liver may follow, as has been recorded by Anders. Obstructions in the third portion and at the duodenal-jejunal flexture is more often associated with a duodenal dilatation and seems to give a consistent point of tenderness to the left and above the umbilicus as pointed out by Kellogg. Toxic manifestations noted are somewhat common to all types, though they vary widely with the individual case, and the extent of the occlusions. More pronounced are mental and physical depression, nausea, regurgitation, low blood pressure, lassitude, headaches usually occur in the temperal region, vasomotor disturbances, swaying sensations, dizzinesss, hyperchondrial tendencies, and neurasthenia. With these may be associated symptoms which are often difficult to differentiate from appendicitis and gall tract lesions, more particularly if there is traction involving the gall tract and liver. This at

times causes considerable pain, which is referred to the shoulder and back.

CASE REPORT.

The case we are dealing with in this instance falls in the class of obstructions resulting from adhesion between the gall bladder and the second portion of the duodenum.

Mr. L. B., age 40, occupation farmer, gives a history of the usual diseases of childhood. Appendectomy seventeen years ago. Eight to ten years later developed symptoms of a gall tract infection. Cholecystotomy was performed in 1921 with considerable relief of symptoms for about one year, when he developed a gripping pain and burning sensation in the mid-epigastrium and gall bladder region, having no relation to the diet, except that it usually increases in severity about thirty minutes to one hour after meals; is made worse by exertion, patient sleeps well, feels very comfortable in the early morning; but after eating soon experiences a heavy and uneasy sensation in the epigastrium, excessive gas, sour eructations, when pain becomes severe often feels nauseated, nothing relieves the condition except vomiting or lying down, at which time he frequently has a sensation of something breaking loose and gurgling sounds in right sub-costal region, appetite is good, but he has noticed in the past two years that he has been able to eat and drink large quantities. He complains of being tired, weak, dizzy, headaches in frontal and temporal regions. During severe attacks often has pain in right thoracic region and palpitation. Bowels are costive; no diarrheal attacks, but purgatives improve his condition for short periods. Has noticed some mucus in stools in past few months, no blood. Laboratory reports: Ewald test breakfast: practically entire quantity returned, watery, chymification poor, Hcl. 42; total acidity 54. Motor Test Meal: given at 10 P. M. withdrawn at 8 A. M. shows no retention; hydrochloric acid 60; total acidity 67. Wassermann reaction negative. Hemoglobin 85%; blood counts are within normal limits. Urine is without noteworthy features except a four plus indican content. Feces: constipated type; occult blood positive, yeast two plus; negative for ova and parasites. Physical examination: tall, well developed, fair nourished. Lungs: expansion poor; otherwise negative. Heart: extends to left Mammary line, sounds are distant but no murmurs. Blood pressure 110-76. Abdomen: operative scar in right hypochondriac. region; some tenderness and rigidity in the epigastrium and right hypochondrium. No masses palpable, excessive gas. Epitrochlear glands enlarged. Tongue: coated. X-ray report shows an atonic stomach enormously dilated. The greater curvature extending below the crest of the ileum. Duodenum is fixed to the right of the median line with a persistent deformity. Three-hour observation shows a practically complete retention of the barium meal. Six-hour observation shows a retention of approximately three-fourths of the meal. At twenty-four hours the stomach is entirely empty, but there is ileocecal and colonic stasis.

The patient came to operation with a diagnosis of gastric dilatation, duodenal obstruction, adhesions. The operative findings showed the gall bladder distended, thickened walls, and evidences of a chronic cholecystitis, with dense adhesions extending to the second portion of the duodenum, binding it down until it was believed inadvisable by the surgeon to attempt to break these loose. A posterior gastro-enterostomy was done, with an enterostomy three inches below the gastric opening by means of a Murphy button. The case did well up to the third post-operative day, when he developed evidences of a paralytic ilius, vomiting some blood and excessive quantities of bile. On the seventh day the patient was opened again and a gastrostomy was done, but continued to lose ground, and died the following day.

COMMENT.

A study of the above case presents a condition which may at times follow surgery in the upper abdomen, more frequently in the instance of frankly infected gall bladders, when this focus is not entirely removed.

The process is often of a much milder type than the one presented here, but if it is sufficient to produce a partial retention, or a delay in the passage of duodenal content for hours, it will certainly give rise to a series of toxic symptoms, which are in sharp contrast to those produced by the more mild poisoning in simple gastric retension of stasis in the lower tract.

DISCUSSION.

Dr. S. K. Simon: This is a very interesting clinical case Dr. Browne has reported, from various angles. Here was a man who had been operated on for gall tract lesion, and one year following operation began developing pronounced abdominal symptoms. The point of chief interest in the history was that the pain in the right hypochondriac region was relieved temporarily by lying down. The moment he sat up he began having pain again. He also said that no matter how badly

he suffered in the evening, on awakening the following morning he felt well. Symptoms came on within one hour after breakfast and persisted throughout the day. He was a farmer, and he said when the pain came on he would lie down in the field for about 30 minutes and his pain would be somewhat relieved. That gave us the first inkling there was some other feature connected with the case.

A motor test meal showed an emptying of the stomach within 12 hours. This was out of line with the X-ray finding of an enormously dilated stomach. In that case, the stomach should have shown at least a 24-hour retention. Here was a man who showed not only that motor meal emptied in 12 hours, but barium was out of the stomach within 24-hour period, as Dr. Samuel has demonstrated. We disagreed slightly with Dr. Samuel, and Dr. Browne and I, after reasoning the case out carefully, concluded that the obstruction was not at the pylorus, but was further down in the duodenum. Our reasoning from the clinical viewpoint was that the 1st and 2nd portions of the duodenum was the area involved. The patient had had a gall bladder operation and it was very reasonable to conclude that adhesions had formed about the gall bladder and duodenum with bands extending down to 2nd portion, when the patient stood up the food swung, as a hammock, over the band of adhesions. When he lay down it relaxed the band, and he was relieved as the contents emptied through. Some of the side angles and views, besides the mechanical features, brought out the fact that the patient was toxic. He was much more toxic than one would expect from simply a gastric dilatation. He was unusually fatigued at all times, and unable to carry on any work at certain parts of the day. He suffered with headaches, dizziness, and as Dr. Browne relates, various other toxic conditions. This could not be explained on the basis of gastric dilatation. They do not suffer very materially with toxic symptoms. In duodenal dilatation there is the toxic feature added, which experiments have shown is due to absorption of chemical matter through the duodenum.

At the operation, we were able to see the very marked adhesions between the duodenum and gall bladder with the band of obstruction at the second portion of the duodenum. The case was ante-mortem diagnosed on the operating table, and the condition as we reasoned it out, proved itself. Unfortunately the patient succumbed. We were unable to obtain post-mortem. Therefore, we had to content ourselves with the operative findings to substantiate the diagnosis.

Dr. Allan C. Eustis: One feature of the case struck me especially; we usually associate dilatation of the stomach with achylia; but the relative high free hydrochloric acid in this case would be in favor of Dr. Simon's original diagnosis of obstruction rather than any intrinsic disease of the stomach.

Another point of interest is the relief this patient obtained while in the recumbent position. This recalls to my mind practically every case of chronic gall bladder disease I have seen in recent years with adhesions and pylorospasm have been instructed to lie on the right side for one hour after each meal. For those cases who refuse operation, as a clinical procedure, I think you would find it of great value if you have these patients lie on their right side for one hour after each meal. The pull on the gall bladder will be relieved by this simple method and it is often surprising how much more readily the stomach will empty itself.

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THE HOSPITAL ABUSE LAW.

The bill intended to diminish the abuse of our two State general hospitals, passed both in the House and Senate by an overwhelming majority, has doubtless been signed by the Governor as this is being printed, for his excellency promptly saw the necessity for the correction of the abuse and favored the enactment of proper legislation. The measure was endorsed by the State Medical Society, the Orleans Parish Medical Society, the Staff of the Charity Hospital, the authorities of the Shreveport hospital and of the New Orleans Charity Hospital, the latter institution differing merely as to the penalty to be imposed for violation of the law.

The official figures presented uncontrovertible evidence as to the existence of the abuse and the necessity for its correction.

As usual, the medical profession in its fight for the right was handicapped by the age-old insinuation of self-interest, but it was so clearly shown that the whole public, and especially the deserving poor, were suffering far more than the doctors from the existing unfortunate situation that the old cry lost the weight it had carried heretofore.

We believe that even the proponents of the bill perhaps do not fully realize the importance of the fight they have won and of the legislation they have secured. For the first time the State itself has spoken and cleared the doubt caused by various and different rulings as to the right of admission into its hospitals. Through its General Assembly it has declared that its charity hospitals were intended for the poor and has instructed their Boards of Administrators to take the action necessary to limit its service of these hospitals to the needy, aside from emergencies of course.

Great credit is due to all those who gave unstintingly of their time and energy to the good cause and there is glory enough for everybody in the success achieved, hence, we shall mention no names, but surely the tax-paying public and the medical profession should not miss any opportunity of showing their appreciation to the deserving ones.

HELP FOR THE DOCTORS.

In a recent editorial appearing in *The Saturday Evening Post* we read that "the Medical Society of the County of Kings, Brooklyn, one of the oldest in the country, has just established the interesting precedent of admitting laymen to associate membership. The avowed reasons for this novel departure are that the inclusion of influential citizens would create friends of medical progress and enable the public to

assist the profession in its efforts to restrain unqualified practitioners and prevent employment of harmful methods. Whether or not this plan will work out as effectually as its sponsors hope still remains to be seen. In the meantime it can scarcely be regarded as anything but a step in the right direction.

"There are other fields than that of popular medical education in which laymen can do much to further the efforts of physicians. Thousands of lives and vast sums of money are annually exacted as tribute to unscrupulous nostrum venders. There are dozens of so-called consumption cures and cancer cures which do a tremendous amount of harm owing to the fact that faith in them keeps persons away from competent practitioners until it is too late to save their lives. There are means of coping with this growing evil, but they are in the hands of legislators and business men and not in those of doctors.

"There is another matter in which physicians stand in grave need of the co-operation of the lay public. Compulsory vaccination laws are under fire. Bills have been introduced in state legislatures which, if they became laws, would prevent diphtheria anti-toxin and most other biological products which play so large a part in modern medicine.

"If the comparative inactivity of physicians and men of science is a trustworthy index of their reaction to these attacks, even they do not perceive the reality of the menace which threatens their calling and all the millions whose lives depend upon it free and proper exercise. Unless the situation is promptly and vigorously taken in hand it will inevitably become worse before it can become better."

SYPHILIS AND HEART DISEASE.

The relation between syphilis and cardiac disease was discussed at the recent sessions of the Imperial Social Hygiene Congress (British) by Colonel Sir Leonard Rogers, representing the Government of India. He said that practically the whole of heart disease in India was due to syphilis and concluded that the eradication of it would reduce heart trouble there to negligible proportions.

In this connection it might be observed that India is not alone in recognizing the great socio-economic problem of controlling syphilis. The United States Public Health Service has recently issued a compilation of abstracts relating to visceral syphilis for use in its co-operative work with the State departments of health in the control of venereal diseases. These abstracts reflect the causative influence of syphilis in diseases of the heart, aorta and peripheral blood vessels. Special attention is being given in all countries to the prevention of these diseases by prompt adequate treatment in the early stages of syphilis before the heart and blood vessels become involved.

NEW CONVENTION IDEA.

A new style in conventions is developing, according to Edward Eyre Hunt, conference and convention expert of the United States Department of Commerce.

Instead of meeting in large cities, where attendance at sessions is often reduced because of giddy urban distractions, wise convention managers, Hunt finds, are now arranging their gatherings for places where a maximum of rest and wholesome recreation may be combined with the actual work of the conference.

"The present tendency," Hunt says, "is to lengthen the convention period, condense the actual business to be considered into as few meetings as possible, and above all to plan the work of the convention so there may be a sound combination of work and recreation."

Under this new conception of the ideal environment for conventions, industries and organizations that work out their prob-

lems through periodic conferences are, more and more, scheduling their meetings for resorts where golf, tennis, riding and other sports may be indulged in by members between sessions. At such places facilities for the meeting are to be found as adequate as exist in most large cities, while the opportunities for developing real acquaintanceship among the members and a spirit of fellowship are infinitely increases.

Hunt cites as an instance of the new idea in conventions the coming meeting of the Society of Automotive Engineers, 1000 strong, at French Lick Springs, Ind., where golf courses, tennis courts, riding stables, and other facilities for recreation are at hand.

In a large city, the delegates to a convention of this size would be scattered through many hotels. At French Lick they will all be quartered under the roof of Tom Taggart's big French Lick Springs hotel. No time lost, no taxi fares wasted attending sessions. When sessions are adjourned, the choice of rest or play without loss of time, effort or cash.

"Improved facilities for conventions and conferences, such as provided at French Lick and a few similar resorts," Hunt says, "have been set up for its own use by the General Electric Company, on an island it owns in Lake Ontario. This island has been named 'Association Island.' Separate meetings called 'camps,' are held here each summer for the sales force, engineers, manufacturing division and other groups of company representatives.

"These camps," Hunt says, "are genuine clearing houses of ideas. They also serve to bring about friendships and acquaintanceships that could not be developed at ordinary conventions."

At the old-time convention, working by day and playing by night, the windup often found half the members in need of rest and repairs. The new scheme, rapidly becoming a fixed order, reverses the order of business to a large extent, and is designed to leave everybody fit and fine at the finish.

A short morning session is held, from 9 or 10 to 12. Then adjournment is taken until evening, leaving the members free to play golf, ride horseback, go on hikes through the hills, take the baths, or otherwise divert themselves. Another session in the evening, to which everyone comes refreshed and rested, completes the day. No evening sessions run later than 10 o'clock. That gives everyone time for a full night's sleep and gets him up the next morning with a clear head and plenty of pep.

Which, everyone will admit, is something new in the line of morning-after-convention feeling!

CATTLE TUBERCULOSIS RAPIDLY REDUCED BY AREA PLAN.

Carrying the campaign of eradicating animal tuberculosis to areas where it is very strongly entrenched is one of the newer developments in the nation-wide program to rout the disease. A survey just completed by the Bureau of Animal Industry, United States Department of Agriculture, shows the aggressive action taken by many counties.

The eradication of tuberculosis under the "area" plan is now being conducted in 34 of the 98 counties having more than 15 per cent of tuberculosis infection among cattle, and in 54 of 165 counties containing cattle that are tuberculous to the extent of more than 7 per cent but not more than 15 per cent. Thus, about one-third of the most badly infected counties have eradication work under way. Two of the counties, formerly very serious affected, have already reduced the infection to 0.5 per cent or less and are in the "modified accredited area" class.

There are 241 counties in the country where tuberculosis among cattle exists to the extent of more than 3 per cent and up to 7 per cent. Of these counties 93 are

conducting area work to eradicate the disease and 8 of them already have qualified as modified accredited areas. The work is also going forward rapidly in the more lightly affected areas where sentiment strongly favors eradicating the disease before it becomes more serious. At the beginning of 1926 the list of modified accredited areas totalled 149 counties, thus indicating excellent progress toward the conquest of the disease.

NEWS ITEMS.

On page 75 of this issue Dr. Ullman, our associate editor for Mississippi, makes a plea for more hearty co-operation on the part of county secretaries in furnishing *The Journal* with monthly items of news. We feel sure that Mississippi will respond to the urgent request of Dr. Ullman for the necessary material in order that this department of our publication will serve a real purpose in keeping the physicians in our neighbor State posted on all matters of medical interest. Practically, it becomes an impossibility for an associate editor to do justice to the organization he aims to serve if the necessary support on the part of district society secretaries is withheld. This applies equally to the parish societies of Louisiana. We feel that our State Society News sections can only be made interesting and worthy of attention if each parish society representative will promptly report to us on their scientific gatherings, hospital staff meetings, and any other items of interest. In passing the Editor might say that all such news items should be in our hands by the twentieth of the month preceding publication date.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

ORLEANS PARISH MEDICAL SOCIETY TRANSACTIONS.

During the month of June the Board of Directors held one meeting. There has been one Joint Clinical Meeting of the Orleans Parish Medical Society with the Charity Hospital Staff, and one Scientific Meeting of the Society.

The Board of Directors still has under consideration the proposed revision of the By-Laws and as only a part of this revision has been gone over it is probable that this matter will not be brought to the vote of the General Body until the coming fall.

Dr. W. W. Calhoun has been elected to Active Membership.

Drs. J. M. Donald, W. V. Garnier, M. W. Hunter and H. H. Winters have been elected to Interne Membership.

The vote on the proposed purchase of a domicile site has finally been closed with 227 members in favor of this purchase and 80 members against this purchase. As the actual authorization of this purchase must come from the Society in meeting assembled a resolution for such a purpose has been introduced at last Scientific Meeting held June 28th, 1926.

At the Scientific Meeting held June 28th the following papers were presented and discussed:
"Multiple Carpo-metacarpal Dislocations with Report of a Case."
By.....Dr. Waldemar R. Metz

Discussion opened by Dr. O. C. Cassegrain

"The Ethmoids and Sphenoids as Sources of Focal Infection Usually Overlooked"
By.....Dr. Amedee Granger

"A Plea for Complete Examination in Hematuria"
By.....Dr. P. Jorda Kahle

To open Discussion.....Dr. W. A. Reed

"Yatren in the Treatment of Amebic Dysentery." A Preliminary Note
By Invitation: Drs. R. H. Turner and P. H. Jones

To open Discussion.....Dr. F. M. Johns

Dr. H. S. Cocram retiring from Active Practice has resigned as an active member of this Society. His name has been proposed for Honorary Membership.

The Hospital Abuse Bill introduced in the House by Mr. John Dart and sponsored by the Orleans Parish Medical Society through its Hospital Abuse Committee has been passed by both the House and the Senate and awaits only the Governor's Signature for its adoption as a law. The Hospital Abuse Committee, Dr. A. E. Fossier as Chairman, deserve considerable credit for its efforts and perseverance in having the bill passed by both the House and Senate.

The following is a letter from the New Orleans Medical and Surgical Journal which is self-explanatory:

June 3rd, 1926.

Dr. H. Theodore Simon, Secretary,
Orleans Parish Medical Society,
1551 Canal Street,
New Orleans, La.

Dear Doctor Simon:

According to the recent ruling of the Journal Committee, I take this opportunity to inform the Orleans Parish Medical Society that from this date on, the expenses for the making and publishing of cuts will be borne by the Journal Committee, up to and including seventy-two square inches of cut space. According to the average size of cuts, this will give the essayist and opportunity to have about six cuts in his paper.

We hope that this decision of the Journal Committee and the remission of this paragraph of our contract relating to cuts will meet the approval of the Orleans Parish Medical Society. In view of the fact that the contract specifically states that we are to charge for cuts, we would be pleased to have from you the approval and understanding of the above change.

Yours very respectfully,
(Signed) P. T. TALBOT, M. D.,
General Manager.

The Membership of the Society is 484.

REPORT OF TREASURER FOR MAY.

Actual Book Balance 4/28/26	$3,485.45
Receipts during May	333.40
Total receipts	$3,818.85
Expenditures	659.11
	$3,159.74
Outstanding checks	54.00
Bank Balance: 5/31/26	$3,213.74

REPORT OF LIBRARIAN FOR MAY.

The reference work has been steady during the month. It is gratifying to report that there is an ever-increasing number of new patrons among the library clientele. Five bibliographies have been prepared on subjects as follows:

Carcinoma of Appendix (1918-25)

Tuberculosis of Appendix (1918-25)

Primary Sarcoma of the Spine

Puerperal Infection, 1923-25 (material in O. P. M. S. Library)

Puerperal Infection, 1923-25 (not in O. P. M. S. Library)

22 volumes have been added to the Library—of which 3 were received by gift, 4 by purchase, 4 by subscription and 11 from the New Orleans Medical and Surgical Journal. A list of accessions is as follows:

International Clinics, 1922, v. 1-2.

International Clinics, 1925, v. 1-4.

American Surgical Association Transactions. 1925.

Medical Interpreter, v. 8. 1926.

International Medical Annual. 1926.

Mississippi State Medical Association Proceedings. 1925.

Chicago Municipal Tuberculosis Sanitarium Report. 1925.

Rockefeller Foundation. Annual Report. 1925.

Pharmacopeia of the U. S. 1925.

Bourne—Recent Advances in Obstetrics and Gynecology. 1926.

Craig—Parasitic Protozoa of Man. 1926.

Johnson—60 Years in Medical Harness. 1926.

Hansen—Investigation on the Blood Sugar in Man. 1923.

Kato—Further Studies on Decrementless Conduction. 1926.

Mayo Foundation — Lectures on Nutrition. 1925.

Stewart—Skull Fractures. 1925.

Lilienthal—Thoracic Surgery. 1925. 2 v.

On May 29th, a large number of journals were received by gift from Dr. Oechsner. Many of these filled gaps in our files and others will be used in exchange with other libraries. Dr. W. H. Block also donated journals during the month. The Library is always glad to receive gifts of journals whether new or duplicate of those already in our collection, and we would be glad if the practice were more general. We are always happy to send for donations.

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY

H. Theodore Simon, M. D., Associate Editor.

TUBERCULOSIS AND PUBLIC HEALTH ASSOCIATION OF LOUISIANA.

Room 14, 535 St. Charles St.,

New Orleans.

The new colored tuberculosis sanatorium in Shreveport was formally opened Sunday, May 23rd. This building will care for 50 patients and is in charge of Dr. Chas. R. Gowen, Medical Director of "The Pines." Colored physicians from Shreveport also assist. The building is modern in every respect and thoroughly equipped to give adequate care to its patients. Appreciation for the work done by Dr. Gowen, and Mrs. Meyer Benson, president, since the erection of both the white and colored "Pines" in Shreveport, was evidenced by the devotion and praise given them on the occasion of the dedication of the new colored building.

The Baton Rouge Chapter of the American Red Cross have a blue print map showing tuberculosis statistics which they have accumulated in the past three years from cases contacted by their workers. Pins of different colors are used to designate lost, active and hospital cases.

Ouachita Parish is interested in having a tuberculosis camp. Plans are now being formulated and we hope to be able to report progress in a later issue.

During the present school term, Ouachita, Washington and Tangipahoa parishes had the Modern Health Crusade in operation in one or more of their schools. This means that many children in Louisiana are learning systematic health habits and will be better able to combat disease by thus building a stronger resistance to all forms of germ life. We hope the next school term will find many more parishes engaged in this splendid health movement. We look to our parish groups and committees to promote this work. "Health Training in Schools," by Theresa Dansdill is a wonderful handbook and should be in the possession of every teacher and health worker in the State. Write to us for literature on the Crusade and for descriptive circular of the handbook.

We will be glad to receive from our readers and others, any material of interest which we may include in a later number of our bulletin. We ask our parish units to contribute to this source.

The annual meeting of the National Tuberculosis Association will be held in Washington, D. C., October 4th to 8th, following the meeting of the International Union Against Tuberculosis, which is to be held in Washington, September 30th, October 1st and 2nd. The National Association selected its meeting date to conform to the International Meeting, so as to permit of a joint session, thereby including in its program the leading tuberculosis experts of various European countries. The International Union is limited in attendance only to members of the Union. Fee for membership is $2.00. Further information about either meeting may be obtained from the National Tuberculosis Association, 370 Seventh Avenue, New York City.

We are informed by the National, that the new directory of Tuberculosis Sanatoria and directory of Tuberculosis Associations, will shortly be ready for distribution. Let us have your order at $1.00 for the Sanatoria Directory and 50c for the Directory of Tuberculosis Associations.

The semi-annual examination of the Louisiana Nurses Board of Examiners was held in New Orleans and in Shreveport, May 3-4, 1926.

The successful applicants are:

Ida Dorothy Achee, Edna Benker Amann, Alice Patricia Bacon, Rolena Baird, Florence Irene Balshaw, Elsie Gladys Barnes, Thelma Elizabeth Baye, Rose Benenato, Gertrude Elizabeth Beville, Elese Bond, Theo Ettie Brooks, Nellie Lucye Burton, Ophelia Marie Cointment, Annie Mae Cooper, Anna Lee Copeland, Irene Catherine Crouch, Willie Mae Cummings, Marcelle Esther Dansereau, Myrtle Laura Daspit, Neige M. Daspit, Louise Crinsoz de Cottens, Wesley Duty, Alice Irene Ellis, Mary Veronica Fannaly, Pearl Rose Fields, Madeline Pauline Finale, Esther B. Fitzgibbons, Virginia Galmiche, Edna Blanche Gandy, Lillian Mary Gebs, Leonora Graves, Jessie Carolyn Hammack, Edna Posey Harrison, Daisy Allene Harwell, Daisy Beatrice Hayden, Gladys Stone Hession, Omega Rhea Idom, Karen Johanne Mathilde Pedersen Jacobsen, Louise Marie Otell Jones, Florine Tassin Julier, Helen Elizabeth Kopperl, Eleanor Pearl Lee, Lillie Helen Liebe, Elise Agnes Stehr Luttgeharm, Phoebe Antoinette McCrea, Mary Bell Malloy, Zennia Bailey Monce, Vivian M. Sicard Musso, Ollie Bee Netterville, Emma Lucille Paige, Amelia Parker, Maida Perrett, Myrtle Alma Pool, Willie Parish Roan, Myrtle Emily Rose, Sister Alphonsine Casey, Sister Anna Holland, Sister Dominica Malley, Sister Martha Schoenfelder, Sister Gonzaga Wall, Sister Mary Callista Young, Jennie Silverman, Temple Izora Stacy, Elizabeth Stalsby, Sallye Woodward Stewart, Delphia Alma Sumter, Ada Lucile Thompson,

Texas Earl Wright Wiegman, Lydia Williams, Eleanor Genevieve Wilson, Claire Marie Wogan, Frances Marian Bass, Ruby Alma Barfield, Frankie Elizabeth Beck, Agnes Benoit, Eunice Catherine Brabham, Thelma Juanita Broberg, Hattie Bell Combs, Bonnie Marie Culp, Edna Mae Friedlander, Bernice Fulton, Enes Johanna Hollander, Daisy Hollier, Ida Mae Ivey, Eulalee Munholland Kirsch, Agnes La Borde, Hilda La Vergne, Irene McCraine, Florence G. Marshall, Phenie James, Thercie James, Blanche Una Newsom, Marie Aurelia Orio, Mary McBride Rose, Genevieve Saizan, Louise Robinson Schneider, Annie Laurie Sheffield, Norma Lucile Verlaque, Alice Vigo, Myrtis Nora Wooley.

PRIZE THESIS CONTEST.

The American College of Physical Therapy announces a Prize Contest, subject to the following rules and conditions:

Eligibility—This contest is open to Licensed Clinicians, Physicists, and Fourth and Fifth Year Medical Students from recognized medical schools.

Subjects—The subject must be on some branch of physical therapeutics embracing Galvanism, Diathermy, Radiant Heat-Light, Ultraviolet Light, X-rays, Radium, Hydrotherapy, Exercise.

Scope—The paper must be limited to 2,000 words or less, and must involve some problem of research, laboratory or clinical, pertaining to closely allied or actually on physical therapeutics. A short abstract of 200 words or less should accompany all papers, which are to be typewritten on one side of paper only and double spaced.

Time—All Theses must be submitted to the Chairman of Thesis Committee, Dr. D. Kobak, 30 North Michigan avenue, Chicago, not later than August 15, 1926.

Judges—The judges will be selected from the faculties of several medical schools, and will be men who are not connected with the college.

Prizes—There will be six prizes (physical therapy equipment) the total value of which will exceed $2,500.

Announcement of winners will be made at the Clinical Congress to be held at the Drake Hotel, Chicago, October 18th to 23rd, 1926. The winning papers will become the property of the College and will be published in its official journal.

THE AMERICAN COLLEGE OF PHYSICAL THERAPY.

THE HIGH COST OF CHILDREN.

It costs about $6,150 to bring up one child from, and including, birth to the age of 18, according to the Metropolitan Life Insurance Co., which is making a series of studies on "the value of man" based on the approximate expenditures in dollars and cents for a growing child during the non-productive period of life.

This total is reached by adding to the initial "cost of being born," estimated at $250, the sums of $2,500 for food; $1,620 for rent, reckoning the share of the child as one-sixth of the total so expended; $300 for fuel and light, $351 for furniture and household maintenance; $144 for first cost of installation of the home; and for clothing, $912 for a boy and $1,002 for a girl.

CHILDREN'S CLINIC, UNIVERSITY OF VIRGINIA.

Nearly 1,000 children already are on the lists of the general child welfare clinic recently organized in connection with the pediatric department of the University of Virginia Hospital to serve the needs of the people of the mountainous section of Western Virginia and to provide a laboratory for the teaching of pediatrics to nurses and medical students. The department of psychology of the University will superintend the giving of mental tests and the department of anatomy and anthropology will study the national and racial characteristic of the patients of the clinic. The expenses of the first three years have been provided by private subscriptions and by a grant from the Commonwealth Fund.

ANTI-TUBERCULOSIS CAMPAIGN, MASSACHUSETTS.

Reporting progress in the 10-year program for the control of tuberculosis in children begun in 1924, the Massachusetts Department of Public Health states that 10,000 white children between 5 and 15 were examined during the first year at clinics held in 43 cities and towns. Approximately 29 per cent of the children reacted to the tuberculin test, 28 per cent gave a history of exposure to human tuberculosis, 25 per cent of these being cases of immediate contact with the disease, and 15 per cent of the rural children gave a history of contact but did not react to the test. Among other defects discovered and treated were enlarged and diseased tonsils and adenoids in 31 per cent of the country and 26 per cent of the city children; poor posture in about 60 per cent of all the children, and valvular heart disease in 1.7 of both groups. Re-examination of some of these children during the present year indicates that through the cooperation of the local communities, physical defects are being corrected and underweight is already being lessened.

CHILDREN DRINKING TEA AND COFFEE.

Large numbers of children are drinking tea and coffee every day, in spite of the practically unanimous opinion of the medical profession that these stimulants are harmful to children, according to facts secured from medical specialists by Dr. Robert Roy Irvin and reported in the Medical Journal and Record (New York).

PUBLIC HEALTH, RUSSIA.

Three hundred and ninety-five million gold rubles for public health work during the current fiscal year is provided for in the budget of the Union of the Soviet Socialist Republics and those of the federated states, according to Isviestia of Moscow. This sum is twice as large as that provided in 1923-24. Isviestia further reports the establishment in Ukrainia in 1925 of 24 infant consultations in cities, 177 in rural districts, 60 day nurseries in cities, 324 in rural districts and 18 milk kitchens. In Kharkov, Kiev, Odessa, and Ekaterinsolav, day nurseries were established for the care of children of university students.

CHILD HEALTH, SWITZERLAND.

Swiss children, in addition to their regular prescribed class work in gymnastics, are to be given by their teachers as much opportunity as possible for exercise and play, long walks and excursions being recommended in detailed regulations for the protection of the health of school children recently issued by the government of the canton of St. Gall. Much emphasis is placed by the regulations on the proper construction of school benches, adequate lighting and proper posture, the teachers being required to watch the children's posture and amount of clothing worn, and also to take preventive measures against colds and overstrain.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examinations:

JUNIOR MEDICAL OFFICER (INTERNE).

Applications for junior medical officer will be rated as received until August 31. The examination is to fill vacancies in Veterans' Bureau Hospitals and Diagnostic Centres, and in positions requiring similar qualifications.

The entrance salary for this position in the field service of the Veterans' Bureau is $1,860 to $2,400 a year without allowances, or $1,260 to $1,860 a year with quarters, subsistence and laundry, the entrance salary within the range stated depending upon the qualifications of the appointee as shown in the examination and the duty to which assigned. Those who show only the minimum qualifications for admission to the examination will be eligible for appointment at the minimum salary only. To those whose services are satisfactory, and in the discretion of the appointing officer there may be granted a salary increase of not more than $600 a year at the end of the six month's probationary period required by the civil service rules, and at the end of eighteen months the salary of $3,300 a year, without allowances, may be paid in the discretion of the appointing officer and subject to the existence of vacancies.

The duties, under immediate supervision, are to admit patients, take histories, make physical and mental examinations and record findings; to make ward rounds of inspection, note charts, record observations; to prescribe for minor ailments or for acute or emergency cases and to dispense medicine in emergency; to perform minor surgical operations and to assist at major operations and in redressing; to administer anaesthetics; to make routine laboratory tests and analyses; to assist at out-patient clinics in dressing and in administering vaccines; to keep records, make up case histories, answer correspondence relating to patients and compile statistics requiring medical training.

Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience.

SENIOR MEDICAL TECHNICIAN (PATHOLOGY).

Applications for senior medical technician (pathology) must be on file at Washington, D. C., not later than July 13. The examination is to fill a vacancy in the Surgeon General's Office, War Department, Washington, D. C., and vacancies occurring in positions requiring similar qualifications.

The entrance salary is $1,860 a year. After the probational period required by the civil service act and rules advancement in pay without material change in duties may be made to higher rates within the pay range for the grade, up to a maximum of $2,400 a year. Promotion to higher grades may be made in accordance with the civil service rules as vacancies occur.

The duties, under direction, are to dissect, prepare, describe, and classify histological and pathological specimens and arrange such materials for sectioning, study, and display; to do research work in technical methods; and to perform related duties as assigned, including assisting in autopsies.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of U. S. Civil Service Examiners at the postoffice or customhouse in any city.

MAIL DIRECTORY INFORMATION CARD PROMPTLY.

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This information will be used in compiling the Tenth Edition of the *American Medical Directory*, now under revision in the Biographical Department of the Association. The Directory is one of the altruistic efforts of the Association and is published in the interest of the medical profession which means ultimately in the interest of the public. It is a book of dependable data concerning the physicians and hospitals in the United States and Canada.

THE CHIROPRACTIC BILL.

The Louisiana State Medical Society was successful in defeating the Chiropractic Bill before the Senate Committee on Public Health and Quarantine on June 1st.

Dr. C. C. Bass, Dean of Tulane Medical College, Dr. W. H. Seemann, Delegate to American Medical Association and Professor of Hygiene at Tulane Medical College; Dr. S. M. Blackshear, President of Louisiana State Medical Society; Dr. B. A. Ledbetter, Chairman, Committee on Public Policy and Legislation; Dr. P. A. McIlhenny, Professor of Clinical Orthopedics and Surgical Diseases of Children; Dr. L. J. Menville, Chairman, House of Delegates, Louisiana State Medical Society, all spoke against the bill in behalf of the Louisiana State Medical Society before the Committee.

The success of our accomplishments was due to the co-operation of the State Board of Medical Examiners, Orleans Parish Medical Society and the Louisiana State Medical Society. There was a large delegation of physicians from all parts of the State in attendance as follows:

Drs. B. A. Ledbetter, S. M. Blackshear, E. Denegre Martin, P. A. McIlhenny, C. C. Bass, J. A. Danna, C. V. Unsworth, W. H. Seemann, Chas. Gelbke, L. J. Menville, E. L. Leckert, F. M. Johns, A. A. Herold, Marvin Cappel, R. O. Simmons, J. A. Knighton, C. A. Weiss and P. T. Talbot.

The vote of the Committee was 7 to 1 against the bill. This subject was subsequently introduced in the House of Representatives.

Subsequent to the above appearances this bill was introduced by Judge Sorelle in the House. Upon the hearing before the Committee on Health and Quarantine, the bill was reported unfavorable by a 6 to 2 vote. Representative L. D. Jones and J. J. Meredith voted in favor of the bill. Chiropractors of the state staged another big rally before the House Health and Quarantine Committee when the bill giving the practors state recognition and the creation of a board was considered. The arguments pro and con lasted until after midnight.

A similar bill, that of Senator Homer Barousse, was killed in the senate the week before.

Among the advocates of the bill assembled were: Donelson Caffery, attorney for the order; Dr. W. W. Fife, Gus Oertling, G. L. Deano, J. H. Stafford and wife; Mrs. O. W. Chamberlain, Miss Anna Lincks, Mrs. Joie Englehart, Miss Mamie Englehart, Mrs. Crawford, Messrs. Templeman and Nelson Burrell.

The medical profession was solidly arrayed against the bill. Among those present were: Dr. Blackshear, president of the Louisiana State Medical Society; Dr. R. B. Harrison, Secretary, State Board of Medical Examiners; Dr. T. E. Wright of the legislative committee, Monroe; Dr. J. A. Danna, Dr. B. A. Ledbetter, Chairman of the Legislative Committee; Dr. E. L. Leckert; Dr. W. H. Seeman, state and city bacteriologist; Dr. Marvin Cappel, coroner of Rapides, Alexandria; Dr. Charles F. Gelbke, Gretna; Dr. C. A. Weiss, Baton Rouge; and T. Semmes Walmsley, representing the medical societies.

MISSISSIPPI STATE MEDICAL ASSOCIATION

J. S. Ullman, M. D., Associae Editor.

To the Members of the Mississippi State Medical Association:

For more than a year past we have endeavored to conduct a column that would be of interest to the doctors of Mississippi. It has been our policy to tell the news of the societies, of the various hospitals and of the individual doctors. It must be obvious to you, however, that it is absolutely impossible for anyone to glean the various items of interest by himself. Doctors are naturally modest creatures and many an activity of theirs that would be of much interest to some professional friend does not get into the public print. It is therefore earnestly and urgently requested of the various society secretaries or reporters that they keep notes of happenings when they occur so that when the time comes to send their contribution in to the Mississippi editor they will not have to rack their brains to think of something to say.

To the individual members of the society, the suggestion is made that anything of interest coming to the knowledge of any doctor be sent in. This will be very much appreciated and welcomed by us.

This is not intended to be a one-man column but is being run for the doctors of Mississippi, and without their co-operation it cannot be run at all. Please get busy and start something.

Dr. Neill H. Buie, formerly of Eddiceton, Miss., has recently moved to Fayette, where he is now practicing.

At the last meeting of the State Medical Association at Jackson, under the guidance of Dr. George Atkins, of that city, the roentgenologists of the State met in order to organize a roentgenological society for Mississippi. Dr. Marcus Beekman, of Natchez, Miss., served as temporary chairman. A committee was appointed to draw up by-laws and a constitution and to consider ways and means to form a permanent organization next year.

Everybody who attended the Convention remarked on Jackson's hospitality. Too much credit cannot be given the members of the Central Medical Society and particularly their committee on arrangements for the splendid manner in which the meeting was conducted. "A good time was had by all."

Late on the afternoon of May 29th, 1926, Dr. D. C. Warren, of Union Church, Jefferson County, Mississippi, died. In his passing Southwest Mississippi lost probably her last practitioner of the old school.

Dr. Warren was always a courteous gentleman, a tried and true friend as well as a most successful physician. He was born in Jefferson County seventy-five years ago and was graduated at the Medical Department of Tulane University in the Class of 1876. He settled at Union Church and began practice there on the 17th day of March that year and has continued his work in the same place ever since.

He was married shortly after settling at Union Church to Miss Mary Inez Torrey. He leaves, beside his widow, three daughters, Mrs. Smiley, of Hazlehurst, Misses Lucy and Lottie Warren, of Union Church, and Dr. Geo. T. Warren, of Brookhaven.

The Central Medical Society met at 8 P. M., June 15, at the Elks Club in Jackson, Mississippi, with about 40 members present. The following program was presented:

1. The Cause and Treatment of Epistaxis.....Dr. T. E. Ross, Jackson
2. The Diuretic Action of Ammonium Cloride and Novasurol .....Dr. P. R. Greaves, Jackson
3. A Report of Some Cases .....Dr. E. L. Green, Jackson
4. Business Session.
5. Adjournment.
6. Lunch.

Dr. T. E. Ross, President of the Mississippi Medical Society, will be present at the next meeting.

On June 27 the cornerstone for the new King's Daughters Hospital at Greenville was laid with impressive ceremonies under the direction of the Grand Lodge of Mississippi Masons.

President T. E. Ross, of the Mississippi State Medical Society, announces the following appointments:

Medicine—S. E. Eason, New Albany.

Surgery—John Darrington, Yazoo City.

Hygiene—D. J. Williams, Gulfport.

Eye, Ear, Nose and Throat—D. C. Montgomery, Greenville.

COMMITTEES.

Public Policy and Legislation—(Ex-officio, the President and the Secretary): I. W. Cooper, Meridian; Willis Walley, Jackson; F. J. Underwood, Jackson.

Publication—J. S. Ullman, Natchez; M. J. L. Hoye, Meridian; T. M. Dye, Clarksdale.

To Attend Teachers' Association—H. H. Ramsay, Ellisville; H. F. Garrison, Jackson; N. C. Womack, Jackson.

Hospitals—J. E. Green, Richton; W. H. Anderson, Booneville; H. A. Gamble, Greenville.

Scientific Work—W. H. Fritzell, Brookhaven; C. H. Ramsay, Collins; T. M. Dye, Clarksdale.

Medical Education—H. L. McKinnon, Hattiesburg; G. S. Bryan, Amory; S. W. Johnson, Vicksburg.

Necrology—C. D. Mitchell, Jackson; J. D. Donald, Hattiesburg; A. M. Harrelson, Stringer.

Budget and Finance—S. W. Johnston, Vicksburg; G. E. Adkins, Jackson; W. L. Little, Wesson.

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BOOK REVIEWS

Abdominal Operations: By Sir Berkeley Moynihan. W. B. Saunders Co. Philadelphia. 1926. Fourth edition.

It is almost sufficient to give the author's name for one to, almost with prejudice, form a favorable opinion of these two great volumes. Before reading them I had heard and learned much of the author's abilities; and during the course of the reading I have come to understand the reasons for the many favorable comments.

The fourth edition of this work is certainly a masterpiece on abdominal surgery—probably unparalleled in medical literature. The arrangement of the various topics, the masterly language employed, the easiness with which it can be read and enjoyed, as well as the excellent presentation makes one almost forget the drudgery of some of the literature through which we often attempt to wade. The most modern surgical opinions of the various subjects are presented in their fullest details.

In the first section the author presents the various matters that cannot too often be reviewed by the experienced as well as the novitiate. The pre-operative care, operative conduct, and after treatment are just a few of the many interesting and instructive subjects presented. In addition there are presented several other headings in this section that are very useful to the surgeon.

The entire second and third sections are devoted to operations on the stomach and intestines; whilst the fourth section discusses operations upon the liver; and the work is very appropriately concluded with the fifth section which considers the operations upon the pancreas and spleen.

I have never read a book so interesting, fascinating, and as instructive. It appeared to me that I was following Jean Valjean in Hugo's "Les Miserables" through his heroic adventures.

FRANK M. LORIA, M. D.

Practical Helps in the Study and Treatment of Head Injuries: By Adolph M. Hanson, M. D. Boston. Richard G. Badger. 1925.

This excellent monograph fulfills the promise given in the preface, of presenting in brief form, practical suggestions for the treatment of head injuries by the general surgeon. All of the essential points in anatomy are given in lucid language and with clear illustrations in abundance. This is followed by detailed descriptions of treatment, both medical and operative, of all types of cranial injury. The advice given in Chapter VI as to the treatment of cases seen in shock, viz., by the administration of camphorated oil and strong black coffee, together with the application of heat, will not be universally followed. There are now too few advocates of stimulation, and too many that morphine and heat are sufficient. The question as to when to decompress and when to depend on spinal puncture for relief of pressure symptoms is still debatable, but one might well be guided by the principles outlined in this book. Taken all in all this is a useful book for the library of the general surgeon.

E. A. FICKLEN, M. D.

Manual of Parasitic Protozoa of Man: By Charles F. Craig, M. D. Philadelphia, J. B. Lippincott Company. 1926.

In this book Craig has presented all of the important features that are known regarding the morphology, life-history, relation to disease, prophylaxis and diagnosis of the more important protozoan parasites of man. A large part of the life work of the author has consisted in the study of the parasitic protozoa and this, with his characteristic, practical viewpoint, has eminently fitted him for the task of preparing an authoritative treatise on this subject.

All of the common parasites of man are considered and the known information about them is stated in a very definite and instructive way. A great many references are given for the benefit of those who may wish to go deeper into any particular subject.

The number of illustrations, a great many of which are original, is pretty large and they are well selected.

The present reviewer feels that this book is so complete and practical and that the subject is of such importance that it will be a necessary part of the working library of all practitioners and students of medicine.

C. C. BASS, M. D.

Non-Surgical Treatment of Diseases of the Mouth, Throat, Nose, Ear and Eye: By Thomas H. Odeneal, M. D. Philadelphia, P. Blakiston's Son & Co. 1926.

Written particularly for the beginners and the general practitioner—covers briefly though concisely the subjects named. The book is well worth reading by all regardless of branch or specialty pursued.

W. MARVIN JOHNSON, M. D.

Pharmacopoeia of the United States of America. Tenth Decennial Revision (U. S. P. X.): By the Authority of the United States Pharmacopoeial Convention held at Washington, D. C., May 11, 1920. Prepared by the Committee of Revision and Published by the Board of Trustees. Philadelphia, J. B. Lippincott Company. 1926.

The tenth revision of the U. S. Pharmacopoeia is a volume smaller and more compact than the previous edition. It contains a number of changes to which it might be well to call the attention of the medical profession. In the first place, there has been deleted from this edition 190 preparations which were in the U. S. P. IX. These include 25 fluid extracts, 15 tinctures, 11 extracts and miscellaneous other preparations. Most of the fluid extracts, tinctures and extracts have been removed for the purpose of simplification, other preparations of the deleted forms of the drug remaining, although a few are drugs which are no longer considered useful. One of the popular, and useless, preparations removed is the glycero-phosphates. Sumbul, zinc preparations and lithium preparations have also been removed. Cerium oxalate has been expurgated, and wrongly, we think. Cerium oxalate is an excellent gastric sedative when given in sufficiently large doses. The trouble with this drug is that the usual dose given is below a decigram, whereas the full dose should be 2 grams. Forty new articles have been added. These include such well known preparations as acid acetyl salicylic, arsphenamin, barbital, carbon tetrachloride, epinephrine, chaulmoogra oil, phenosulphonphthalein, quinidin, whiskey, brandy, and thyroxin. Other additions include drugs less well known that have proved successful in the past few years.

Additional changes include new methods of biological assay and the making compulsory of biological assay of a number of important drugs and preparations. Microscopical description of powdered drugs has also been incorporated and after each drug or preparation of a drug the other preparations of that drug or chemical are indicated.

The metric system has been adopted throughout the work and very properly the monstrosity "mil" has been dropped and the universal term "cubic centimeters" has been employed. In conjunction with the use of the metric system, it might be stated that the apothecary system is mentioned when the average dose is given, the dosage being first given in the metric system and then the equivalent given in the apothecary system. Except for this one use of the apothecary system, this old-fashioned, clumsy and inefficient table has been abolished. In giving dosage, the compilers state that the dosage is given as an average dose. It seems unfortunate that if such is the case the liquid preparations are not given as are the dry preparations, for the most part, in multiples of 5. Where the average dose is given as 4 c.c., it might just as properly be given as 5 c.c. Compound tincture of cardimon is given as 4 c.c. If 5 c.c. was considered the average dose, it would be very much easier for the physician to make up his prescription on the basis of 100 c.c. of the preparation being ordered. Tincture of belladonna is given as .6 c.c.; it might just as well be given as 5 c.c. The same statement applies to the average teaspoonful dose. The average teaspoon is just as likely to hold 5 c.c. as 4 c.c. and a dessertspoon is just as prone to have a capacity of 10 c.c. as it is 8 c.c. If this was considered to be the value of this particular measure, again figuring would be made very much easier. The compilers consider a tablespoonful as 15 c.c., which is as it should be. In the dry preparations, multiples of 5 are used almost entirely. The dose of chloral hydrate is given as .5 gm. and similar preparations are given this way. In other dry preparations, the alkaloids for example, the effort has been made to transform the accepted dose in apothecary system to the metric system. Instead of making the dose of morphine sulphate .01 gm., it is made .008 gm. It would be very much simpler to use everywhere the multiples of 5. A 100 c.c. bottle would contain 20 doses and not 25 and multiplying a given dose by 20 is very much more simple than multiplying by 25, particularly if the given dose is an odd number, such as carbon tetrachloride, the dose of which is given as 2.5 gm.

J. H. MUSSER, M. D.

Skull Fractures: By William H. Stewart, M. D. (Annals of Roentgenology, Vol. VI.) New York, Paul B. Hoeber, Inc. 1925.

Dr. Stewart is to be complimented upon the thoroughness of his book, and especially the beautiful illustrations it contains. This book represents the modern and American method of artistic reproduction.

The subject of skull fractures is of interest not alone to the Roengenologist but to all practitioners of medicine, and for this reason this book should meet the approval of all medical men.

The author clearly explains and demonstrates the normal skull, that we may appreciate the abnormal. His explanation of the time factor in the disappearance of Roentgenographic evidence in fractured skull is of the greatest importance, and this alone should make the book invaluable. This book should be in the library of all Roentgenologists.

There are six chapters, with 49 beautiful illustrations.

LEON J. MENVILLE, M. D.

Facts on the Heart: By Richard C. Cabot, M. D. Philadelphia, W. B. Saunders Co. 1926.

This book is a compilation of an enormous amount of diagnostic statistical data from the Massachusetts General Hospital. The pathological findings at necropsy are used as the starting point and the clinical data is studied and criticized in the light of these findings. The observations are not those of one man, but the conclusions are more or less individualistic. The author in the preface advises most readers to read the opening and the closing chapters and the summaries at the end of each section, and then to look over as many of the illustrative cases as seem interesting, and very few people, he believes, should even try to read the whole of the book. The book contains, of necessity, little in the way of therapeutics.

After an introductory chapter on methods of examination, explanation of the material studied and frequency of lesions and variations of necropsy diagnosis, the author devotes a chapter to each of the following types of heart disease: Rheumatic, Syphilitic, Hypertensive, Myocarditis, Angina Pectoris, Endocarditis, Non-deforming valvular sclerosis, Acute Pericarditis, Chronic Pericarditis, Thyrocardiac and Congenital Heart Disease. The last chapter is a summary of the book. The facts for the most part are not much in conflict with those which have dominated modern cardiology within the past decade. An occasional acute difference with much of the current cardiological opinion is noted. The extreme opinion of the author on the subject of the diagnosis of organic mitral regurgitation certainly cannot be allowed to pass without comment. A forthcoming paper by H. B. Sprague, of recent studies at the Massachusetts General Hospital gives an altogether different version of this important subject, and the one that seems more accepted in modern cardiological circles. The author's note that "Most diagnoses of heart disease, whether made by physicians or suspected by the patients, are in my experience wrong." "In such cases the heart is usually sound," is rather a broad statement, which does not speak very highly of the ability of the author's colleagues. The possibility of being wrong in cardiac diagnosis is worthy of accentuation, but does not warrant undue exaggeration. Aside from occasional sharp and not wholly justified statements, the book contains much that is valuable, as a basis for comparison and consequently an index in the progress of the study of heart disease.

G. R. H.

Comparative Physiology: By Lancelot T. Hogben, M. A. (Cantab.), D. Sec. (London). New York, The Macmillan Company. 1926.

Professor Hogben's book represents the materials of a course of lectures delivered first in the Zoology Department and later in the Department of Physiology in Edinburgh University to medical students having completed a course of elementary physiology and to science students taking a course in zoology. It is the only work in English which gives an account of the physiology of the lower organisms. The effort is modest in scope but will be found useful and enlightening to the physician whose thoughts turn occasionally to basic sciences upon which his profession is furnished.

FRANCIS M. MUNSON, M. D.

Investigations on the Blood Sugar in Man: By Karen Marie Hansen, Pub. by Author. 1923.

While the method for determination of blood sugar is more or less antiquated and decidedly tedious, the method employed does not detract any from this excellent piece of research work. There may be some criticism on the duration of time the test was performed following the withdrawal of blood because the Glycolysis of the blood must be considered.

These experiments attempt to show the reality and explain the significance of the Oscillations in the Blood Sugar in Fasting Normal and Fasting Diabetic individuals; also after administration of Glucose in Normal and Diabetic persons.

In the normal individual the Fasting Blood sugar is about 100 mg. per 100 c.c. of blood. The fasting blood sugar is not an absolute constant quantity on the same day in the same individual.

It is known that after taking carbohydrate, that the blood sugar rises, not however as a smooth running curve as so often depicted, but with wave formation at the surface of the main rise. These small waves are particularly active and relatively large, when the level of the blood sugar is fairly constant, that is to say, at the top of a rise, which forms a plateau before the fall takes place, or when the sugar fasting level is unchanged which is seen with small administrations.

These waves are found in the amount of blood sugar 1, 2, 3, 4, 6, 12, 24, and 36 hours after a meal, consequently it is assumed that they are always present in a normal living individual. It is supposed that the liver sends out the waves although it is also probable that the peripheral tissues can yield up sugar to the blood.

The upper limit for the rise of blood sugar in normal persons after administration of Glucose

is about 180 mg. per 100 c.c. of blood. This limit however varies a little in different persons but seldom exceeds 180 mg.

The author of this little volume states that the explanation that the blood sugar rise ceases in the neighborhood of 180 mg. per 100 c.c. of blood must be sought in the phenomenon which is called removal-acceleration, and the power of acceleration is perhaps due to an increased supply of the pancreas hormones to the blood.

I regard this volume not only highly interesting to the teacher and research worker, but it is of a decided importance to the clinician treating Diseases of Metabolism.

UPTON GILES, M. D.

Modern Medicine: Its Theory and Practice. By Sir William Osler, Bart., M. D., F. R. S. 3d ed., rev. and re-edited by Thomas McCrae, M. D., assisted by Elmer H. Funk, M. D. Vol. 2. Illustrated. Philadelphia and New York, Lea and Febiger. 1925.

It is difficult to make a comparison between this and the corresponding volume of the preceding edition, because of a general rearrangement of the subject matter. However, in the individual articles, it is found that obsolete material has been deleted and recent information supplied. In fact, for a work of its scope and character, the subject matter is quite recent and complete.

Several new authors have contributed to this volume, amongst them being Dr. Edward Jenner Wood, with an article on Pellagra. It may be worthy of note to mention at this time, that Pellagra is classed with the Deficiency Diseases, little attention being paid to the possibility of there being an infecting agent, other than a summary of the report of the Thompson-McFadden Pellagra Commission.

Notice is taken of the growing interest in Proto-zoology and other so-called Tropical Diseases, the articles on anebiasis and bilharzia being particularly complete.

Space forbids mention of each article but it is believed that every article should prove itself to be both valuable and interesting and the volume is heartily recommended.

This volume is devoted to: Diseases of doubtful etiology; Diseases caused by protozoa, spirochetes and animal parasites; Diseases due to physical, chemical and organic agents; Deficiency diseases.

J. HOLMES SMITH, JR., M. D.

Gould and Pyle's Pocket Cyclopedia of Medicine and Surgery: Based upon the Fourth Edition of Gould and Pyle's Cyclopedia of Medicine and Surgery. Third edition. Revised, enlarged and edited by R. J. E. Scott, M. A., B. C. L., M. D. Philadelphia, P. Blakiston's Son & Co. 1926.

The third edition of this little pocket book, which has served a generation of doctors, will be found more useful than ever before. It has been thoroughly revised, much of it has been rewritten, a great many new articles have been incorporated and a few of the old ones omitted, all of which has resulted in an increase of 150 pages. The general plan of the book remains as before, including the dose table, which is in accordance with the new United States Pharmacopoeia X. It will doubtless continue to serve as a useful companion to the busy practitioner.

FRANCIS M. MUNSON, M. D.

Medical Diagnosis for the Student and Practitioner: By Charles Lyman Greene, M. D. Sixth edition, revised and enlarged. Philadelphia, P. Blakiston's Son & Co. 1926.

The sixth edition of this excellent book has been extensively and thoroughly revised and a great deal of new material added. As a matter of fact, so much new material has been added that there is a great deal of difference between this enormous tome of nearly fifteen hundred pages and the original, convenient, handy and practical early edition. Dr. Greene has followed very much the same form that he used in the original edition with marginal notes pointing out the most important features of the various paragraphs. Some of these notes are excellent; others are useless. "The bastard syndrome," "Private vs. public," "Scylla and Charybdis" means very little. In fact it would seem that a good many of these marginal notations might be omitted. If they were left out entirely it would allow more words to a page and might cut down somewhat the size of the book.

There are a few things which might be criticized in the authors evaluation of the importance of various things that he presents. Examination of the heart occupies almost one-third of the book, with the addition of a large number of unnumbered illustrations. Fifty pages are devoted to the electrocardiograph—certainly a disproportionate amount when we consider how few medical men are able or ever will be able to use and to interpret the results of this instrument of precision. Contrasted with the large number of pages devoted to this subject is the subject of anaphy-

laxis, certainly a most important development of recent years and particularly important in view of the fact that sera are being used more and more frequently in the treatment of disease. To this condition a little over one page is given. Another criticism which might be offered is that in going over the book it is found that in one place one statement is made and in another place a statement contradicting the first. As example, on page 154, it is said that "leucopenia and relative lymphocytosis are present as in true pernicious anemia but of high grade." On page 139 the only disease of the blood in which leucopenia is said to occur in chlorosis, but a long list of drugs which are rarely used, is included among the causes. Under lymphocytosis no mention is made of infectious mononucleosis. An obvious error occurs in speaking of "leprosy trypanosomiasis." Several pages are devoted to the practically useless index of urea excretion and no mention is made of the simple, easy and practical Bass-Johns test for typhoid fever.

It is easy enough for a reviewer to go through a book and to find errors. It is surprising indeed that there are not more errors than were found in looking under numerous headings. When one considers the perfectly enormous amount of material contained in a volume such as this, it is a wonder that more mistakes do not creep in. The proper evaluation of all the different tests is again a question of the personal equation and should not be criticized. The real, main criticism of a book such as this lies in the question of one man's being able properly to know about all the material in the book and whether such a book would not better be supplanted in the future by smaller volumes which are written by men who have first-hand knowledge of the information they wish to convey. However, Dr. Greene has accomplished his task well indeed and his book is certainly one that may be safely recommended to students for study and to practitioners of medicine for reference.

J. H. MUSSER, M. D.

Thoracic Surgery: By Howard Lilienthal, M. D., F. A. C. S. Philadelphia, W. B. Saunders Co. 1925.

This treatise in two volumes of more than six hundred pages each, covers the subject thoroughly, reviews of the literature and valuable contributions from the author's wide personal experience.

The author, in his usual enthusiastic and complete manner, presents each subject so well that there is little left for the reader's imagination.

It is all that can be asked for as a reference book for the general surgeon.

You may obtain information on any condition pertaining to thoracic surgery.

It is gratifying to note the space given to pulmonary tuberculosis, its treatment by pneumothorax and other surgical procedures, as this is indeed a subject neglected by so many surgeon.

SHIRLEY C. LYONS, M. D.

Submucous Endocapsular Tonsil Enucleation: By Chas. Conrad Miller. Chicago, Oak Press. 1925.

This is a well written and interesting volume on a slightly different method of enucleating tonsils. In addition to the description of his particular technique, the author gives the evolution of tonsil surgery with a short historical review from the time of Celsus to the present day technique. The many problems which so frequently confront the Otolaryngologist in this particular field are discussed and a number of helpful points are offered the reader. As is to be expected the author criticizes all methods of tonsillectomies except his own, and for this he lays claim to fourteen distinct advantages for the submucous endocapsular tonsillectomy.

F. E. LEJEUNE, M. D.

Memorandum of Toxicology: Partly Based on Tanner's Memoranda of Poisons: By Max Trumper, B. S., A. M. With an Introduction and Addenda by Henry Leffman, A. M. Philadelphia. P. Blakiston's Son & Co. 1925.

This convenient little manual, bound attractively in red flexible leather, has much to commend it. In addition to descriptions of the various poisons, including those that are assuming importance in modern industry and those used during the war, the book contains chapters on the definitions and modes of action of poisons, the diagnosis of poisoning, duties of practitioner in case of poisoning, the treatment of poisoning, the detection of poisons and their classification. It will find a useful place on the desk of the physician and in the accident room of the hospital.

FRANCIS M. MUNSON, M. D.

Treatment of Kidney Diseases and High Blood Pressure: By Frederick M. Allen, M. D. Part I, Practical Manual for Physicians and Patients. Morristown, N. J., Physiatric Institute. 1925.

Allen's Kidney Diseases and High Blood Pressure is a splendid little manual containing some very practical suggestions, well-written in a clear manner, so as to be understood by the laity as well as the profession.

HAROLD A. BLOOM, M. D.

Diseases of the Eye: By Swanzy. 13 ed. Ed. by Louis Werner, M. B., F. R. C. S. I., Sen. Mod. Univ. Dub., with illus. Philadelphia, P. Blakiston's Sons & Co. 1925.

The thirteenth edition of this English classic is a volume of about seven hundred pages, midway in size and detail between our own books by May and DeSchweinitz. It was published after the author's death by his close associate, Dr. Lerner, who made the necessary additions and apparently the very excellent drawings.

A broad practical exposition of the subject is presented in an accurate, simple and clear way, free from the prejudices that are so often incorporated into books of this sort.

I enjoyed this volume so much that I read it from cover to cover, which accounts for a two months delay in the publication of this abstract.

Among the ideas of especial interest is the use of mercuric oxycyanide injections in rather numerous ocular affections and the omission of akenisis in ocular surgery.

Medical Ophthalmology: By R. Foster Moore. 2 ed., with 8 pl. and 92 illus. Philadelphia, P. Blakiston's Son & Co. 1925.

The second edition is a volume of over three hundred pages and was published but a very few years after the first edition, showing that an English book of this type which is well written, justifies itself from a practical standpoint.

It is essentially a description of the ocular conditions which occur in constitutional diseases and developmental anomalies. Ocular cerebral localization is discussed at some length and in a reasonably simple manner. The bodily systems are taken up and the various ocular manifestations of their several diseases described.

Although ocular involvement of focal infections in the body are apparently not due to a single organism, their frequency and importance in the opinions of American Ophthalmologists would seem to justify at least some mention and even detailed description. The author has purposely omitted all mention of them. But then,—there are many roads that lead to Rome, and each of us thinks our road is the shortest.

CHAS. A. BAHN, M. D.

PUBLICATIONS RECEIVED.

Lea & Febiger, Philadelphia and New York: "Text-Book of Urology," by Oswald Swinney Lowsley, A. B., M. D., F. A. C. S.

Paul B. Hoeber, New York: "The Principles of Anatomic Illustration before Vesalius," by Fielding H. Garrison, A. B., M. D.

G. P. Putnam's Sons, New York and London: "Text-Book of Materia Medica for Nurses," compiled by Lavina L. Dock, R. N., and Jennie C. Quimby, R. N.

J. B. Lippincott Company, Philadelphia, London and Montreal: "Experimental Pharmacology as a Basis for Therapeutics," by Dr. Hans H. Meyer and Dr. R. Gottlieb.

William Wood and Company, New York: "The International Medical Annual," 1926.

The C. V. Mosby Company, St. Louis: "The Beaumont Foundation Lectures, subject The Thyroid Gland," by Charles H. Mayo, M. D., and Henry Plummer, M. D. "A Manual of Normal Physical Signs," by Wyndham N. Blanton, B. A., M. A., M. D. "Nursery Guide," for Mothers and Children's Nurses, by Louis W. Sauer, Ph.D., M. D. "Diseases of the Skin," by Richard L. Sutton, M. D., LL.D., F. R. S.

P. Blakiston's Sons & Company, Philadelphia: "Edgar's Practice of Obstetrics," by J. Clifton Edgar, revised by Norris W. Vaux, sixth edition. "Surgical Anatomy of the Human Body," by John B. Deaver, M. D., Sc. D., LL.D., F. A. C. S., second edition, Vol. 1.

W. B. Saunders Company, Philadelphia and London: "Collected Papers of The Mayo Clinic and the Mayo Foundation," edited by Mrs. M. H. Mellish, H. Burton Logie, M. D., and Charlotte E. Eigen Mann, B. A. "Applied Biochemistry," by Withrow Morse. "Pediatrics," by various authors, edited by Isaac A. Abt, M. D., Vol. VIII. General Index to Abt's Pediatrics, Volume I to VIII.

REPRINTS.

"Actinomycosis, report of a case involving the Duodenum and Biliary Tracts," by Maurice Buchsbaum, M. D. "Surgical Exposure of Deep-seated Inaccessible Neoplasms for a proper implantation with Radium Emanation in Capillary Glass Tubes by the Basal Route," by Paul E. Durham, M. D. "The Constitutional Effect of Prolonged Intestinal Toxemia," by William Seaman Bainbridge, A. M., M. D., Sc.D. "Acidosis and Acetonaemia in Relation to Sea-Sickness," by B. Sidney Jones, M. R. C. S., Eng., L. R. C. P. Lond. Surgeon, R. M. S. "Thyroid Dysfunction in Toxicosis," by William Seaman Bainbridge, A. M., Sc. D., M. D.